[JOINT COMMITTEE PRINT]

DESCRIPTION OF PROPOSALS RELATING TO RESEARCH AND DEVELOPMENT INCENTIVE ACT OF 1987 (S. 58) AND ALLOCATION OF R&D EXPENSES TO U.S. AND FOREIGN INCOME (S. 716)

SCHEDULED FOR A HEARING

BEFORE THE

SUBCOMMITTEE ON TAXATION AND DEBT MANAGEMENT

OF THE

SENATE COMMITTEE ON FINANCE

ON APRIL 3, 1987

PREPARED BY THE STAFF

OF THE

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INTRODUCTION

The Senate Finance Subcommittee on Taxation and Debt Management has scheduled a public hearing on April 3, 1987, on proposals relating to the credit for increasing certain research expenditures (S. 58, sponsored by Senators Danforth, Baucus, Wallop, Boren, Durenberger, Mitchell, Wilson, DeConcini, Kerry, Cranston, Bingaman, Riegle, Symms, Cochran, Heflin, Lautenberg, Rockefeller, McCain, Helms, and Harkin), and allocation of R&D expenses to U.S. and foreign income (S. 716, sponsored by Senators Wallop, Baucus, Danforth, Moynihan, Chafee, Roth, Boren, Pryor, Heinz, Durenberger, Armstrong, Riegle, Rockefeller, Symms, Lautenberg, and McCain).

This pamphlet,[1] prepared by the staff of the Joint Committee on Taxation, provides a description of present law and S. 58 and S. 716. The first part is a summary. The second part is a description of present law, issues, and S. 58 (relating to the tax credit for increasing certain research expenditures). The third part is a description of present law, issues, and S. 716 (relating to allocation of R&D expenses to U.S. and foreign income).

[1] This pamphlet may be cited as follows: Joint Committee on Taxation, *Description of Proposals Relating to Research and Development Incentive Act of 1987 (S. 58) and Allocation of R&D Expenses to U.S. and Foreign Income (S. 716)* (JCS-6-87), April 2, 1987.

I. SUMMARY

S. 58—Senators Danforth, Baucus, Wallop, Boren, Durenberger, Mitchell, Wilson, DeConcini, Kerry, Cranston, Bingaman, Riegle, Symms, Cochran, Heflin, Lautenberg, Rockefeller, McCain, Helms, and Harkin

(The Research and Development Incentive Act of 1987)

Present law provides a tax credit equal to 20 percent of incremental qualified research expenditures of the taxpayer. The credit is scheduled to expire after December 31, 1988.

S. 58 would increase the research tax credit from 20 percent to 25 percent, effective for taxable years beginning after December 31, 1986. The bill also would make the credit permanent.

S. 716—Senators Wallop, Baucus, Danforth, Moynihan, Chafee, Roth, Boren, Pryor, Heinz, Durenberger, Armstrong, Riegle, Rockefeller, Symms, Lautenberg, and McCain

(Allocation of R&D Expenses to U.S. and Foreign Income)

For taxable years beginning after August 1, 1986, present law and Treasury regulations provide detailed rules for the allocation of research and development (R&D) expenses to U.S. and foreign income. For taxable years beginning after August 13, 1981, and on or before August 1, 1986, all expenses of performing R&D in the United States are allocated to U.S. income. S. 716 would similarly allocate to U.S. income all the expenses of performing R&D in the United States for taxable years beginning after August 1, 1986.

R&D allocation rules are relevant to the determination of the amount of the foreign tax credit for some U.S. taxpayers. The United States taxes the worldwide income of U.S. taxpayers but permits them to credit foreign income taxes against U.S. tax imposed on foreign-source taxable income.

Foreign-source and U.S.-source taxable income are computed by first determining the sources of items of gross income and then determining which deductions reduce income from which source. Deductions allocated to foreign-source gross income reduce foreign-source taxable income. A taxpayer whose foreign-source income is free of U.S. tax by virtue of foreign tax credits generally does not benefit from deductions that offset foreign-source income. Thus, it can be advantageous to taxpayers that pay relatively high foreign taxes to minimize allocation of expenses to foreign income.

II. CREDIT FOR INCREASING RESEARCH EXPENDITURES

Present Law

Current Deduction for Certain Research Expenditures

General rule

As a general rule, business expenditures to develop or create an asset which has a useful life that extends beyond the taxable year, such as expenditures to develop a new product or improve a production process, must be capitalized. However, Code section 174 permits a taxpayer to elect to deduct currently the amount of "research or experimental expenditures" incurred in connection with the taxpayer's trade or business. For example, a taxpayer may elect to deduct currently the costs of wages paid for services performed in qualifying research activities, and of supplies and materials used in such activities, even though these research costs otherwise would have to be capitalized.

The section 174 election does not apply to expenditures for the acquisition or improvement of depreciable property, or land, to be used in connection with research.[2] Thus, for example, the total cost of a research building or of equipment used for research cannot be deducted currently under section 174 in the year of acquisition. However, the amount of depreciation (cost recovery) allowance for a year with respect to depreciable property used for research may be deducted in that year under sections 167 and 168. Under the Tax Reform Act of 1986 (P.L. 99-514), machinery and equipment used in connection with research and experimentation are classified as five-year recovery property.

Qualifying expenditures

The Code does not specifically define "research or experimental expenditures" eligible for the section 174 deduction election, except to exclude certain costs. Treasury regulations (sec. 1.174-2(a)) define this term to mean "research and development costs in the experimental or laboratory sense." This includes generally "all such costs incident to the development of an experimental or pilot model, a plant process, a product, a formula, an invention, or similar property," and also the costs of obtaining a patent on such property.

The present regulations provide that qualifying research expenditures do not include expenditures "such as those for the ordinary

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[2] The statute also excludes expenditures to ascertain the existence, location, extent, or quality of mineral deposits, including oil and gas, from eligibility for section 174 elections (sec. 174(d)). However, expenses of developing new and innovative methods of extracting minerals from the ground may be eligible for sec. 174 elections (Rev. Rul. 74-67, 1974-1 C.B. 63). Certain expenses for development of a mine or other natural deposit (other than an oil or gas well) may be deductible under sec. 616.

testing or inspection of materials or products for quality control or those for efficiency surveys, management studies, consumer surveys, advertising, or promotions." The section 174 election cannot be applied to costs of acquiring another person's patent, model, production, or process or to research expenditures incurred in connection with literary, historical, or similar projects (Reg. sec. 1.174-2(a)).

Minimum tax rules

For purposes of the individual alternative minimum tax, the excess of research expenditures that are expensed under section 174 over 10-year amortization is a preference item. The 1986 Act repealed a prior-law provision making the excess of section 174 expensing over 10-year amortization a preference item for personal holding companies. Thus, for all corporations, expensing under section 174 does not give rise to a minimum tax preference item under present law.

Credit for Increasing Certain Research Expenditures

Overview

General rule.—An income tax credit is allowed for certain qualified research expenditures paid or incurred by a taxpayer during the taxable year in carrying on a trade or business of the taxpayer.[3] The credit applies only to the extent that the taxpayer's qualified research expenditures for the taxable year exceed the average amount of the taxpayer's yearly qualified research expenditures in the specified base period, which generally is the preceding three taxable years.

Under the Tax Reform Act of 1986, the rate of the credit was reduced from 25 percent to 20 percent of the incremental research expenditure amount, effective for taxable years beginning after 1985. The 1986 Act also extended the credit for three years, i.e., to qualified research expenditures paid or incurred after June 30, 1981 and before January 1, 1989.

Research definition.—The Tax Reform Act of 1986 provided statutory rules defining qualified research for purposes of the credit. These rules target the credit to research undertaken to discover information that is technological in nature and that pertains to functional aspects of products; also, the 1986 Act expressly excludes certain types of expenditures from eligibility for the credit.[4]

Qualifying expenditures.—A taxpayer's research expenditures eligible for the 20-percent incremental credit consist of (1) "in-house" expenditures by the taxpayer for research wages and supplies used in research; (2) certain time-sharing costs for computer use in research; and (3) 65 percent of amounts paid by the taxpayer for contract research conducted on the taxpayer's behalf.

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[3] The credit was enacted as section 44F in the Economic Recovery Tax Act of 1981. The Deficit Reduction Act of 1984 renumbered the credit provision as Code section 30. The Tax Reform Act of 1986 renumbered this credit as section 41.

[4] In computing the research credit for taxable years beginning after December 31, 1985, base-period expenditures for taxable years beginning before January 1, 1986, are to be determined under the credit definition of qualified research that was applicable in such base-period years and are not to be redetermined under the definition of qualified research in the 1986 Act.

Under the 1986 Act, a 20-percent tax credit also applies to the *excess* of (1) 100 percent of corporate cash expenditures (including grants or contributions) paid for university basic research *over* (2) the sum of (a) the greater of two fixed research floors plus (b) an amount reflecting any decrease in nonresearch giving to universities by the corporation as compared to such giving during a fixed base period, as adjusted for inflation.

The amount of credit-eligible basic research expenditures to which the new university basic research credit applies does not enter into the computation of the incremental credit.[5] The remaining amount of credit-eligible basic research expenditures—i.e., the amount to which the new credit does not apply—enters into the incremental credit computation (and in subsequent years enters into the base period amounts for purposes of computing the incremental credit).

Relation to deduction.—The credit is available for incremental qualified research expenditures for the taxable year whether or not the taxpayer has elected under section 174 to deduct currently research expenditures. The amount of any section 174 deduction to which the taxpayer is entitled is not reduced by the amount of any credit allowed for qualified research expenditures.

Definition of research for credit purposes

In general

The credit is directed at research undertaken for the purpose of discovering information that is technological in nature and when applied is intended to be useful in developing a new or improved business component for sale or use in the taxpayer's trade or business. In addition, research is eligible for the credit only where substantially all the activities of the research constitute elements of a process of experimentation relating to functional aspects of the business component. The Code provides exclusions from the credit for certain research or research-related activities. The costs of developing certain internal-use software are available for the credit only if specified requirements are met.

Research

Research expenditures eligible for the incremental credit are limited to "research or experimental expenditures" eligible for expensing under section 174 (see discussion above). Thus, for example, the credit is not available for (1) expenditures other than "research and development costs in the experimental or laboratory sense," (2) expenditures "such as those for the ordinary testing or inspection of materials or products for quality control or those for efficiency surveys, management studies, consumer surveys, advertising, or promotions," (3) costs of acquiring another person's patent, model, production, or process, or (4) research expenditures incurred in con-

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[5] The Code provides a single research credit, consisting of a 20-percent incremental component and a 20-percent university basic research component. For convenience, this explanation generally refers to these components as the incremental research credit and the university basic research credit.

nection with literary, historical, or similar projects (Treas. Reg. sec. 1.174-2(a)).[6] The term research includes basic research.

Research satisfying the section 174 expensing definition is eligible for the credit only if the research is undertaken for the purpose of discovering information (a) that is technological in nature, and also (b) when applied is intended to be useful in the development of a new or improved business component of the taxpayer. In addition, such research is eligible for the credit only if substantially all of the activities of the research constitute elements of a process of experimentation for a functional purpose. The Code also expressly sets forth exclusions from eligibility for the credit for certain research activities that might otherwise qualify and for certain nonresearch activities.

Technological nature

The determination of whether the research is undertaken for the purpose of discovering information that is technological in nature depends on whether the process of experimentation utilized in the research fundamentally relies on principles of the physical or biological sciences, engineering, or computer science [7]—in which case the information is deemed technological in nature—or on other principles, such as those of economics—in which case the information is not to be treated as technological in nature. For example, information relating to financial services or similar products (such as new types of variable annuities or legal forms) or advertising does not qualify as technological in nature.

Process of experimentation

The term process of experimentation means a process involving the evaluation of more than one alternative designed to achieve a result where the means of achieving that result is uncertain at the start. This may involve developing one or more hypotheses, testing and analyzing those hypotheses (through, for example, modeling or simulation), and refining or discarding the hypotheses as part of a sequential design process to develop the overall component.

Thus, for example, costs of developing a new or improved business component are not eligible for the credit if the method of reaching the desired objective (the new or improved product characteristic) is readily discernible and applicable as of the beginning of the research activities, so that true experimentation in the scientific or laboratory sense would not have to be undertaken to develop, test, and choose among viable alternatives. On the other hand, costs of experiments undertaken by chemists or physicians in developing and testing a new drug are eligible for the credit because the researchers are engaged in scientific experimentation. Similarly, engineers who design a new computer system, or who design im-

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[6] Sec. 174 also excludes from eligibility for expensing (1) expenditures for the acquisition or improvement of depreciable property, or land, to be used in connection with research, and (2) expenditures to ascertain the existence, location, extent, or quality of mineral deposits, including oil and gas.

[7] Research does not rely on the principles of computer science merely because a computer is employed. Research may be treated as undertaken to discover information that is technological in nature, however, if the research is intended to expand or refine existing principles of computer science.

proved or new integrated circuits for use in computer or other electronic products, are engaged in qualified research because the design of those items is uncertain at the outset and can only be determined through a process of experimentation relating to specific design hypotheses and decisions as described above.

Functional purposes

Research is treated as conducted for a functional purpose only if it relates to a new or improved function, performance, reliability, or quality. Activities undertaken to assure achievement of the intended function, performance, etc. of the business component after the beginning of commercial production of the component do not constitute qualified experimentation. The Code also provides that research relating to style, taste, cosmetic, or seasonal design factors is not treated as conducted for a functional purpose and hence is not eligible for the credit.

Application of tests

The term business component means a product, process, computer software, technique, formula, or invention that is to be held for sale, lease, or license, or is to be used by the taxpayer in a trade or business of a taxpayer. If the requirements described above are not met with respect to a product, etc. but are met with respect to one or more elements thereof, the term business component means the most significant set of elements of such product, etc. with respect to which all requirements are met.

Thus, the requirements are applied first at the level of the entire product, etc. to be offered for sale, etc. by the taxpayer. If all aspects of such requirements are not met at that level, the test applies at the most significant subset of elements of the product, etc. This shrinking back of the product is to continue until either a subset of elements of the product that satisfies the requirements is reached, or the most basic element of the product is reached and such element fails to satisfy the test. Treasury regulations may prescribe rules for applying these rules where a research activity relates to more than one business component.

A plant process, machinery, or technique for commercial production of a business component is treated as a different component than the product being produced. Thus, research relating to the development of a new or improved production process is not eligible for the credit unless the definition of qualified research is met separately with respect to such production process research, without taking into account research relating to the development of the product.

Internal-use computer software

Under a specific rule in the Code, research with respect to computer software that is developed by or for the benefit of the taxpayer primarily for the taxpayer's own internal use is eligible for the credit only if the software is used in (1) qualified research (other than the development of the internal-use software itself) undertaken by the taxpayer, or (2) a production process that meets the requirements for the credit (e.g., where the taxpayer is developing robotics and software for the robotics for use in a manufacturing

process, and the taxpayer's research costs of developing the robotics are eligible for the credit). Any other research activities with respect to internal-use software are ineligible for the credit except to the extent provided in Treasury regulations. Accordingly, the costs of developing software are not eligible for the credit where the software is used internally, for example, in general and administrative functions (such as payroll, bookkeeping, or personnel management) or in providing noncomputer services (such as accounting, consulting, or banking services), except to the extent permitted by Treasury regulations.

The Congress intended and expected that these regulations will make the costs of new or improved internal-use software eligible for the credit only if the taxpayer can establish, in addition to satisfying the general requirements for credit eligibility, (1) that the software is innovative (as where the software results in a reduction in cost, or improvement in speed, that is substantial and economically significant); (2) that the software development involves significant economic risk (as where the taxpayer commits substantial resources to the development and also there is substantial uncertainty, because of technical risk, that such resources would be recovered within a reasonable period); and (3) that the software is not commercially available for use by the taxpayer (as where the software cannot be purchased, leased, or licensed and used for the intended purpose without modifications that would satisfy the first two requirements just stated). The Congress intended that these regulations are to apply as of the effective date of the new specific rule relating to internal-use software; i.e, internal-use computer software costs that qualify under the three-part test set forth in this paragraph are eligible for the research credit even if incurred prior to issuance of such final regulations.

The specific rule relating to internal-use computer software is not intended to apply to the development costs of a new or improved package of software and hardware developed together by the taxpayer as a single product, of which the software is an integral part, that is used directly by the taxpayer in providing technological services in its trade or business to customers. For example, the specific rule would not apply where a taxpayer develops together a new or improved high technology medical or industrial instrument containing software that processes and displays data received by the instrument, or where a telecommunications company develops a package of new or improved switching equipment plus software to operate the switches. In these cases, eligibility for the incremental research tax credit is to be determined by examining the combined hardware-software product as a single product, and thus the specific rule applicable to internal-use computer software would not apply to the combined hardware-software product.

In the case of computer software costs incurred in taxable years before the effective date for the new specific rule, the eligibility of such costs for the research credit is to be determined in the same manner as the eligibility of hardware product costs.

Excluded activities

The Code specifies that expenditures incurred in certain research, research-related, or nonresearch activities are excluded

from eligibility for the credit, without reference to the requirements described above relating to technological information, process of experimentation, and functional purposes.

Post-research activities.—Activities with respect to a business component after the beginning of commercial production of the component cannot qualify as qualified research. Thus, no expenditures relating to a business component are eligible for the credit after the component has been developed to the point where it either meets the basic functional and economic requirements of the taxpayer for such component or is ready for commercial sale or use.[8] For example, the credit is not available for such expenditures as the costs of preproduction planning for a finished business component, tooling-up for production, trial production runs, troubleshooting involving detecting faults in production equipment or processes, accumulation of data relating to production processes, and the cost of debugging product flaws.

By way of further illustration, the credit is not available for costs of additional clinical testing of a pharmaceutical product after the product is made commercially available to the general public. However, the clinical testing in the United States of a product prior to production for sale in this country, or clinical testing seeking to establish new functional uses, characteristics, indications, combinations, dosages, or delivery forms as improvements to an existing product, is eligible for the credit. Thus, research (e.g., body chemistry research) undertaken on a product approved for one specified indication to determine its effectiveness and safety for other potential indications is eligible for the credit. Similarly, testing a drug currently used to treat hypertension for a new anti-cancer application, and testing an antibiotic in combination with a steroid to determine its therapeutic value as a potential new anti-inflammatory drug, is eligible for the credit.

Adaptation.—Adaptation of an existing business component to a particular requirement or customer's need is not eligible for the credit. Thus, for example, the costs of modifying an existing computer software item for a particular customer are not eligible for the credit. However, the mere fact that an item is intended for a specific customer does not disqualify otherwise qualified research costs of the item (assuming that the research is not funded by the customer).

Surveys, studies, certain other costs.—The credit is not available for the costs of efficiency surveys, activities (including studies) related to management functions or techniques, market research, market testing and development (including advertising or promotions), routine data collections, or routine or ordinary testing or inspection of materials or business items for quality control. Manage-

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[8] The exclusion from credit-eligibility for activities with respect to a business component after the beginning of commercial production of the component does not preclude the costs of improvements in an existing product from eligibility for the credit. Thus, for example, the expenses of an automobile manufacturer in developing, through a process of experimentation, a more efficient and reliable diesel fuel injector are eligible for the incremental research tax credit even though the research expenses are incurred during or after production by the manufacturer of automobile engines containing the existing (unimproved) diesel fuel injector. However, the costs of any activities of the automobile manufacturer with respect to the improved diesel fuel injector after the beginning of commercial production of the improved diesel fuel injector are not eligible for the research credit.

ment functions and techniques include such items as preparation of financial data and analysis, development of employee training programs and management organization plans, and management-based changes in production processes (such as rearranging work stations on an assembly line).

Duplication.—The credit also does not apply to research related to the reproduction of an existing business component (in whole or in part) of another person from a physical examination of the component itself or from plans, blueprints, detailed specifications, or publicly available information with respect to such component. While such "reverse engineering" activities thus are not eligible for the credit, the exclusion for duplication does not apply merely because the taxpayer examines a competitor's product in developing its own component through a process of otherwise qualified experimentation requiring the testing of viable alternatives and based on the knowledge gained from such tests.

Additional exclusions.—Eligibility for the credit does not extend to expenditures for research (1) that is conducted outside the United States; (2) in the social sciences (including economics, business management, and behavioral sciences), arts, or humanities; or (3) to the extent funded by any person (or governmental entity) other than the taxpayer, whether by grant, contract, or otherwise.

Eligibility of certain computer-use payments

The Tax Reform Act of 1986 generally repealed the prior-law provision treating amounts paid for the right to use personal property in qualified research as eligible for the credit. However, under regulations prescribed by the Treasury, amounts paid by the taxpayer to another person for the use of computer time in the conduct of qualified research are eligible for the credit. The latter provision is intended to benefit smaller businesses that cannot afford to purchase or lease their own computers for research purposes, and hence is intended to apply where the taxpayer is not the principal user of the computer. Consistent with the prior-law limitations on credit-eligibility of rental costs, computer-use payments are not eligible for the credit to the extent that the taxpayer (or a person with which the taxpayer must aggregate expenditures in computing the credit) receives or accrues any amount from any other person for computer use.

In computing the research credit for a taxable year beginning after 1985 (when rental costs are not eligible for the credit), a taxpayer may exclude from the base-period amount with respect to such year any rental costs, etc. (other than for computer-use costs of a type remaining eligible for the credit in post-1985 years) that were allowable as qualified research expenses under section 30(b)(2)(A)(iii) (as then in effect) in a base-period year.

In-house research expenditures

Employee wages qualify for the credit to the extent paid for engaging in the actual conduct of research, in the immediate supervision of the actual conduct of qualified research, or in the direct support of the actual conduct (or of the immediate supervision of the actual conduct) of qualified research. No amount of wages paid

for overhead or for general and administrative services, or of indirect research wages, qualifies for the credit.

In addition, amounts paid for supplies used in the conduct of qualified research are eligible for the credit. The term supplies means any tangible property other than property of a character subject to the allowance for depreciation, land, or improvements to land. Neither the cost of acquisition of, nor the amount of depreciation allowances with respect to, property which is of a character subject to the depreciation allowance is eligible for the credit, whether or not amounts of depreciation are deductible during the year under section 174.

Contract research expenditures

In addition to the categories of in-house research expenditures, 65 percent of amounts paid by the taxpayer for qualified research performed on behalf of the taxpayer enters into the incremental credit computation. The research firm or other person which conducts the research on behalf of the taxpayer cannot claim any amount of the credit for its expenditures in performing the contract.

If any contract research amount paid or incurred during a taxable year is attributable to qualified research to be conducted after the close of that taxable year, that amount is treated, pursuant to a prepayment limitation, as paid or incurred during the period during which the qualified research is actually conducted.

University basic research credit

In general

Prior to enactment of the Tax Reform Act of 1986, research expenditures entering into the computation of the incremental research credit included 65 percent of a corporation's expenditures (including grants or contributions) pursuant to a written research agreement for basic research to be performed by universities or certain scientific research organizations. The Act provides a 20-percent tax credit that applies to the *excess* of (1) 100 percent of corporate cash expenditures for university basic research over (2) the sum of (a) the greater of two fixed research floors plus (b) an amount reflecting any decrease in nonresearch giving to universities by the corporation as compared to such giving during a fixed base period, as adjusted for inflation.[9] The modifications relating to the university basic research credit are effective for taxable years beginning after 1986.

Qualifying expenditures

For purposes of the credit, qualifying basic research expenditures are cash expenditures paid pursuant to a written agreement between the taxpayer corporation [10] and a university or certain other

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[9] The Code provides a single research credit, consisting of a 20-percent incremental component and a 20-percent university basic research component. For convenience, this explanation generally refers to these components as the incremental research credit and the university basic research credit.

[10] For this purpose, the term corporation does not include S corporations (sec. 1361(a)), personal holding companies (sec. 542), or service organizations (sec. 414(m)(3)).

qualified organizations for basic research to be performed by the qualified organization (or by universities receiving funds through the initial recipient qualified organizations). Such corporate expenditures for university basic research are deemed to satisfy the trade or business test for the research credit, whether or not the basic research is in the same field as an existing trade or business of the corporation.

Qualifying expenditures include both grants or contributions by the corporation that constitute charitable contributions under section 170, and also payments for contract research to be performed by the qualified organization on behalf of the corporation. Such expenditures are not eligible for a credit unless and until actually paid by the corporation to a qualified organization. Thus, an accrual basis corporation may not claim the credit for amounts incurred, but not actually paid, for university basic research.

Only cash payments may qualify as a basic research payment. No amount (basis or value) on account of contributions or transfers of property is eligible for either the incremental credit or the basic research credit, whether or not such property constitutes scientific equipment eligible for an augmented charitable deduction under section 170(e)(4).

Since enactment of the credit in 1981, the term basic research has been defined in the Code as any original investigation for the advancement of scientific knowledge not having a specific commercial objective. However, basic research in the social sciences, arts, or humanities and basic research conducted outside the United States are excluded from eligibility for the credit.

Qualified organizations

To be eligible for a credit, the corporate expenditures must be for basic research to be conducted by a qualified organization. For this purpose, the term qualified organization generally includes colleges or universities, tax-exempt scientific research organizations, and certain tax-exempt conduit or grant organizations.

The first category of qualified organizations consists of educational institutions that both are described in section 170(b)(1)(A)(ii) and constitute institutions of higher education within the meaning of section 3304(f). The second category consists of tax-exempt organizations that (1) are organized and operated primarily to conduct scientific research, (2) are described in section 501(c)(3) (relating to exclusively charitable, educational, scientific, etc., organizations), and (3) are not private foundations. Certain tax-exempt grant funds continue to qualify under the second category.

In addition, this provision treats as qualified any tax-exempt organization that is organized and operated primarily to promote scientific research by colleges or universities pursuant to written research agreements, that expends on a current basis substantially all its funds (or all the basic research payments received by it) through grants and contracts for basic research by colleges and universities, and that is either (a) described in section 501(c)(3) and is not a private foundation or (b) described in section 501(c)(6) (trade associations).

Computation rules

The university basic research credit applies to the *excess* of (1) 100 percent of corporate cash expenditures for basic research *over* (2) the sum of the minimum basic research amount plus the maintenance-of-effort amount.

The minimum basic research amount is the *greater* of two fixed floors—

(a) the average of all credit-eligible basic research expenditures under Code section 30(e)(1) (as in effect during the base period) for each of the three taxable years immediately preceding the taxable year beginning after December 31, 1983; *or*

(b) one percent of the average of the sum of all in-house research expenses, contract research expenses, and credit-eligible basic research expenditures under Code section 30(e)(1) (as in effect during the base period) for each of the three taxable years immediately preceding the taxable year beginning after December 31, 1983.

In the case of a corporation that was not in existence for at least one full taxable year during the fixed base period, the Code provides that the minimum basic research amount for the base period shall not be less than 50 percent of the basic research payments for the current taxable year. If the corporation was in existence for one full taxable year or two full taxable years during the base period, the fixed floor is to be computed with respect to such year or years.

The maintenance-of-effort amount is the *excess* of (1) the average of the nondesignated university donations paid or incurred by the taxpayer during the three taxable years immediately preceding the taxable year beginning after December 31, 1983, as adjusted under the Act to reflect inflation, *over* (2) the amount of nondesignated university donations paid by the taxpayer in the taxable year. The term nondesignated university donation means all amounts paid by the taxpayer to all colleges or universities for which a charitable deduction was allowable and that were not taken into account in computing the research credit.

The amount of credit-eligible basic research expenditures to which the new credit applies does not enter into the computation of the incremental credit. The remaining amount of credit-eligible basic research expenditures—i.e., the amount to which the new credit does not apply—enters into the incremental credit computation (and in subsequent years enters into the base period amounts for purposes of computing the incremental credit).

Computation of allowable credit

General rule

As a general rule, the credit applies to the amount of qualified research expenditures for the current taxable year that exceeds the average of the yearly qualified research expenditures in the preceding three taxable years. The base period amount is not adjusted for inflation.

New businesses

For a base period year during which it was not in existence, a new business is treated as having research expenditures of zero in

such year for purposes of computing average annual research expenditures during the base period. However, the taxpayer may be deemed to have expenditures in such a base period year pursuant to the 50-percent limitation rule (described below).

50-percent limitation rule

Base period research expenditures are treated as at least equal to 50 percent of qualified research expenditures for the current year. This 50-percent limitation applies both in the case of existing businesses and in the case of newly organized businesses.[11]

Aggregation rules

To ensure that the credit will be allowed only for actual increases in research expenditures, special rules apply under which research expenditures of the taxpayer are aggregated with research expenditures of certain related persons for purposes of computing any allowable credit. These rules are intended to prevent artificial increases in research expenditures by shifting expenditures among commonly controlled or otherwise related persons.

Changes in business ownership

Special rules apply for computing the credit where a business changes hands, under which qualified research expenditures for periods prior to the change of ownership generally are treated as transferred with the trade or business which gave rise to those expenditures. These rules are intended to facilitate an accurate computation of base period expenditures and the credit by attributing research expenditures to the appropriate taxpayer.

Trade or business limitations

The credit is available only for research expenditures paid or incurred in carrying on a trade or business of the taxpayer. With one exception relating to certain research joint ventures, the trade or business test for purposes of the credit is the same as for purposes of the business deduction provisions of section 162. Thus, for example, the credit generally is not available to a limited partnership (or to any partners in such partnership, including a general partner which is an operating company) for partnership expenditures for outside or contract research intended to be transferred by the partnership to another (such as to the general partner) in return for license or royalty payments. Under the trade or business test, research expenditures of a taxpayer are eligible for the credit only if paid or incurred in a particular trade or business already being carried on by the taxpayer.

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[11] For example, assume that a calendar-year taxpayer is organized on January 1, 1986; makes qualified research expenditures of $100,000 for 1986; and makes qualified research expenditures of $260,000 for 1987. The new-business rule provides that the taxpayer is deemed to have base period expenditures of zero for pre-1986 years. Without regard to the 50-percent limitation, the taxpayer's base period expenditures for purposes of determining any credit for 1987 would be the average of its expenditures for 1984 (deemed to be zero), 1985 (deemed to be zero), and 1986 ($100,000), or $33,333. However, by virtue of the 50-percent limitation, the taxpayer's average base period expenditures are deemed to be no less than 50 percent of its current year expenditures ($260,000), or $130,000. Accordingly, the amount of 1987 qualified research expenditures to which the credit applies is limited to $130,000, and the amount of the taxpayer's credit for 1987 is $26,000.

Other limitations and carryover

The 1986 Act made the research credit subject to the general business credit limitation (i.e., 75 percent of tax liability over $25,000), effective for taxable years beginning after 1985. Any excess amount of the general business credit can be carried back three years and carried forward 15 years, beginning with the earliest year.

In the case of an individual who owns an interest in an unincorporated trade or business, who is a beneficiary of a trust or estate, who is a partner in a partnership, or who is a shareholder in an S corporation, the amount of credit that can be used in a particular year also cannot exceed an amount (separately computed with respect to the person's interest in the trade or business or entity) equal to the amount of tax attributable to that portion of the person's taxable income which is allocable or apportionable to such interest.[12] Any excess credit amount is eligible for the carryover rule described above.

Legislative Proposal

S. 58—Senators Danforth, Baucus, Wallop, Boren, Durenberger, Mitchell, Wilson, DeConcini, Kerry, Cranston, Bingaman, Riegle, Symms, Cochran, Heflin, Lautenberg, Rockefeller, McCain, Helms and Harkin

(The Research and Development Incentive Act of 1987)

S. 58 would increase the research tax credit from 20 percent to 25 percent, effective for taxable years beginning after December 31, 1986. The bill also would make the credit permanent.

Issues

S. 58 raises the following issues with respect to improving the incentives for private investment in research and development activities:

(1) Whether to increase the tax credit to 25 percent?

(2) Whether to make the credit permanent?

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[12] For example, if in a particular year an individual partner derives no taxable income from a partnership which had made incremental qualified research expenditures, the individual may not use in that year any tax credit resulting from incremental qualified research expenditures of such partnership which otherwise would have been properly allowable to the partner (e.g., where the partnership had paid such research expenditures in carrying on a trade or business of the partnership and where any credit allowable to the partnership with respect to such expenditures had been properly allocated among the partners pursuant to Treasury regulations). If in this example the partner had derived taxable income allocable or apportionable to his or her partnership interest, then the amount of credit which may be used in that year by the individual partner may not exceed the lesser of the general limitation amount or the separately computed additional limitation amount applicable to individuals.

III. ALLOCATION OF R&D EXPENSES TO U.S. AND FOREIGN INCOME

Present Law

Jurisdiction to tax income

Countries generally claim the right to tax income for one of two reasons: (1) the income arises in the country, or (2) the person earning the income resides in that country (or owes allegiance to that country). Many countries take the view that the country where income arises, the source country, has the primary right to tax the income.[13] A few countries tax only income that arises within their borders. The United States taxes income that arises in the United States ("U.S.-source income" or "U.S. income"); the United States also taxes income of a U.S. person[14] that arises outside the United States ("foreign-source income" or "foreign income").[15]

Foreign tax credit

U.S. persons are taxable on their worldwide income, including their foreign income. That is, the taxable income reported on the U.S. tax return of a U.S. person includes both U.S. and foreign income. A U.S. person who earns foreign income may incur foreign income tax. The United States has allowed U.S. persons subject to the regular income tax to take full, dollar-for-dollar credit for foreign income taxes[16] since 1918. This credit directly reduces U.S. tax. Since 1921, however, foreign income taxes may reduce U.S. tax on foreign income, but not U.S. tax on U.S. income. Without this limitation (explained in more detail below), the foreign tax credit would permit foreign countries to preempt the taxing jurisdiction of the United States over its primary tax base—U.S. income.

The purpose of the foreign tax credit is to prevent U.S. taxpayers from paying tax twice on their foreign income—once to the foreign country where the income arises and again to the United States as part of the taxpayer's worldwide income. This foreign tax credit system embodies the principle that the country where a taxpayer conducts a business activity (or earns any income), the source country, has the first right to tax any or all of that income, even if it is not the taxpayer's home country. Under this principle, the taxpayer's home country (residence country) has a residual right to tax

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[13] However, some countries, including the United States, modify this rule by treaty with respect to certain passive income, and grant to the country in which the person earning income resides, the residence country, the primary right to tax such income.

[14] U.S. persons are U.S. citizens, resident aliens, U.S. partnerships, U.S. corporations, and, generally, U.S. trusts and estates (Code sec. 7701(a)(30)).

[15] Foreign earned income of a qualified U.S. individual may be exempt from U.S. income tax under Code section 911.

[16] Foreign income taxes include income, war profits, and excess profits taxes paid or accrued during the taxable year to any foreign country (or possession of the United States).

that income, but recognizes the obligation to prevent double taxation. That obligation may totally eliminate residence country tax.

Some countries avoid double taxation by exempting foreign-source income from tax altogether. However, most developed countries, like the United States, minimize double taxation through a foreign tax credit system, providing a dollar-for-dollar credit against home country tax liability for income taxes paid to a foreign country. Either system, the exemption system or the foreign tax credit system, requires a determination of what income is domestic and what income is foreign.

Foreign tax credit limitation

The U.S. system of international income taxation generally is based in part on the principle of capital-export neutrality. Under this principle, a U.S. firm would ideally bear the same total tax burden whether it operated at home or abroad.

Another fundamental premise of the U.S. foreign tax credit system is that foreign taxes should not offset the U.S. tax on U.S.-source income. Accordingly, a statutory formula limits the foreign tax credit so that the credit will offset only the U.S. tax on the taxpayer's foreign income. As a result of the limitation, the U.S. tax system generally departs from capital-export neutrality where firms operate in foreign countries which levy an income tax greater than the U.S. tax on foreign-source income.

Without the foreign tax credit limitation, foreign countries could effectively levy a tax on U.S.-source income by raising their tax rates above the U.S. rate. Because of the credit, the U.S. Treasury would absorb the additional foreign tax burden. That is, post-credit U.S. taxes owed on U.S.-source income would be reduced.

The limitation generally operates by separating the taxpayer's total U.S. tax liability before tax credits ("pre-credit U.S. tax") into two categories: tax on U.S.-source taxable income and tax on foreign-source taxable income. (A series of separate limitations further subdivides the tax on different types of foreign-source income.) Computing the limitation involves finding the ratio of foreign-source taxable income to total taxable income. This fraction is multiplied by the tentative pre-credit U.S. tax on the taxpayer's total income to establish the amount of pre-credit U.S. taxes on the foreign income. This amount is the upper limit on the foreign tax credit. Roughly speaking, another way of expressing the foreign tax credit limitation is "U.S. tax rate (for example, 34 percent) times the lesser of foreign taxable income and worldwide taxable income." In a typical case, a corporate taxpayer might take a foreign tax credit for either foreign income taxes paid or the U.S. corporate tax rate times foreign taxable income, whichever is less.

The following example illustrates the computation of the foreign tax credit limitation. Assume that the U.S. taxpayer has foreign-source taxable income of $300 and U.S.-source taxable income of $200, for total taxable income of $500. Assume further that the pre-credit U.S. tax on the $500 is $170 (i.e., 34 percent of $500). Since 60 percent ($300/$500) of the taxpayer's total worldwide taxable income is from foreign sources, the foreign tax credit is limited to $102, or 60 percent of the $170 pre-credit U.S. tax. Thus, a taxpayer with foreign taxes paid in excess of $102 will be allowed a foreign

tax credit of only $102 (the excess taxes paid may be carried to other years). If the taxpayer has paid less than $102 in foreign taxes, the taxpayer will have a foreign tax credit equal to the amount of the taxes paid. Under the limitation, then, a taxpayer may credit an amount equal to either the pre-credit U.S. tax on his foreign-source income or foreign taxes actually paid on foreign-source income (including foreign tax credit carryovers), whichever is less. Generally speaking, as U.S. tax rates go down (relative to foreign rates), the more likely it becomes that pre-credit U.S. tax on foreign-source income will be less than foreign taxes actually paid.

The manner in which the foreign tax credit limitation prevents foreign countries from effectively levying a tax on U.S.-source income and protects the U.S. Treasury's right to tax U.S.-source income may be illustrated as follows:

Assume that each of two taxpayers (taxable after June 1987 at a 34-percent U.S. rate) earns $100 of U.S. income; one of them earns no foreign income; the other earns $100 of foreign income and pays $50 of foreign tax on that income. The taxpayer with no foreign income owes $34 of U.S. tax. Absent a foreign tax credit limitation, the taxpayer with foreign income could credit the full $50 of foreign taxes. Then, the taxpayer with foreign income would owe only $18 of U.S. tax—the $68 pre-credit U.S. tax liability (on $200 of worldwide income) less the $50 credit. As a result of the high foreign taxes imposed, and allowed as a credit, the U.S. tax collected on the taxpayer's U.S. income would be reduced from $34 to $18. The limitation prevents such reduction of the U.S. tax base.

The foreign tax credit limitation thus tends to both (1) prevent other countries from taxing the U.S. tax base, and (2) protect the United States' right to tax U.S.-source income.

Overall and per-country limitations

Historically, the foreign tax credit limitation has been determined on the basis of either the taxpayer's total foreign income or the taxpayer's foreign income from each separate country, or both. These are known as the overall limitation and the per-country limitation, respectively.

Under the *overall method*, the taxpayer combines the income and losses from all foreign operations and allocates the pre-credit U.S. tax based upon this amount. Therefore, if 60 percent of the taxpayer's taxable income is from all foreign sources combined, then the foreign tax credit is limited to 60 percent of the pre-credit U.S. tax.

Under the *per-country method*, the taxpayer determines the foreign tax credit on a country-by-country basis. Thus, the taxpayer is allowed to take a foreign tax credit for taxes paid to any particular foreign country only to the extent that the taxes paid to that country do not exceed the limitation separately determined for that country.

In the Tax Reform Act of 1976, the Congress repealed the per-country limitation, making the overall limitation mandatory for most U.S. taxpayers. The overall limitation offers taxpayers an advantage over the per-country limitation, at least in years when they have no annual losses in any single country. The overall limi-

tation allows taxpayers to credit any country's income tax so long as total foreign income—whether or not from that country—is high enough. One country's high tax may offset U.S. tax on income from a country that imposes no tax or a low tax. Under the per-country limitation, on the other hand, taxes paid to any foreign country offset only that portion of U.S. tax which is allocable to sources within that country. Many countries with foreign tax credit systems require taxpayers to use a per-country limitation in some or all circumstances.

Excess foreign tax credits

The U.S. foreign tax credit limitation affects the worldwide tax liability of those taxpayers who, as a result of the limitation, have excess foreign tax credits. Historically, these have included U.S. oil companies operating abroad, U.S. banks with foreign loans, and U.S. manufacturers manufacturing abroad. Excess foreign tax credits result when the amount of foreign creditable income taxes paid or accrued in a given year exceeds the taxpayer's foreign tax credit limitation. In general, this occurs when a firm is paying more foreign taxes than the firm would have paid in U.S. taxes had it earned the same income in the United States.

Excess credits also can arise from differences in the deduction allocation rules of the United States and those of other countries. For example, in those cases where a foreign country does not allocate a deduction for U.S.-performed R&D to income within that country, and the United States does, the foreign taxes will be higher than if the foreign country allowed the R&D deduction, and may exceed the foreign tax credit limitation.

Excess credits can arise for a variety of other reasons, all of which involve the limitation. Differences between the income-sourcing rules of the United States (whose rules are generally consistent with international norms generally recognized by developed countries) and those of other countries may result in U.S. treatment of income taxed by another country as domestic income for purposes of the foreign tax credit. Timing differences in the reporting of income and deductions under U.S. and foreign tax laws may result in a taxpayer's being unable to utilize some foreign tax credits in a year in which income is reported in a foreign country but not in the United States. Domestic losses may reduce worldwide taxable income and pre-credit U.S. tax and, hence, the amount of foreign tax credits that can be used currently.

Excess credits can be expected to arise because effective corporate income tax rates in many countries are higher than U.S. income tax rates. The importance of this factor was substantially increased by the reduction in corporate tax rates—from the old maximum average rate of 46 percent to the new maximum average rate of 34 percent—brought about by the Tax Reform Act of 1986. This rate reduction is likely to put many taxpayers previously having no excess credits into an excess credit position. It is estimated, for example, that after tax reform, foreign-source income earned by U.S. taxpayers in an excess credit position will be between two-thirds and three-quarters of all foreign source income of U.S. taxpayers. In the two most recent years for which data are

available, on the other hand, the comparable fractions were only 43 percent (in 1980) and 42 percent (in 1982).

One way taxpayers may reduce or eliminate excess credits is to shift foreign operations to a foreign country or countries with effective foreign income tax rates equal to or lower than the U.S. income tax rates. Another method is to shift foreign operations to a foreign country or countries with deduction allocation and income-sourcing rules more closely resembling the U.S. rules. A third alternative is to bring the foreign operations back to the United States.

Code source rules for income and deductions

History

Rules for determining the source of gross income items have been part of the U.S. income tax law since 1918. In that year, Congress provided some source rules in connection with the tax on the income of foreign persons from sources within the United States.[17] In 1921, Congress enacted an expanded set of source rules for determining both gross income and net (taxable) income from sources within and outside the United States.[18] Congress also, in that year, limited the foreign tax credit to foreign taxes on foreign-source income. The present Internal Revenue Code provisions governing the allocation of income and deductions between U.S. and foreign sources, generally contained in sections 861-865, embody an approach similar to the provisions adopted in 1921.

Current Code provisions

Sections 861 and 862 of the Code list items of gross income that arise from sources within the United States ("U.S.-source gross income" or "U.S. gross income") and from sources outside the United States ("foreign-source gross income" or "foreign gross income"), respectively. Under section 861, U.S. gross income includes, generally, income from sales of inventory property manufactured in the United States and sold in the United States, wages and salaries for work done in the United States, rent paid for property located in the United States, dividends paid by U.S. corporations, and interest paid by U.S. persons. Under section 862, foreign gross income includes income from the sale outside the United States of inventory property manufactured outside the United States, royalties from the use outside the United States of patents, secret processes, and similar properties, and dividends paid by certain foreign corporations. Sections 865 and 988 of the Code, added by the Tax Reform Act of 1986, provide rules for determining the source of income from sales and other dispositions of certain types of personal property.

After determining the amount of *gross* foreign-source and U.S.-source income, taxpayers must determine *net* (or taxable) foreign-source and U.S.-source income. This determination brings deductible expenses into play. Generally, under sections 861 and 862, taxable income from U.S. or foreign sources is determined by deduct-

[17] *See* Revenue Act of 1918, secs. 214(b) and 234(b).
[18] *See* Revenue Act of 1921, sec. 217.

ing from the items of gross income treated as arising from U.S. or foreign sources, as the case may be, (1) those expenses, losses, and other deductions properly apportioned or allocated to those particular items and (2) a ratable part of any expenses, losses, or other deductions which cannot definitely be allocated to some item or class of gross income (secs. 861(b), 862(b)).[19] Under these principles, for example, a taxpayer with $100 of U.S.-source gross income, $80 of expense properly allocated to U.S.-source gross income, $100 of foreign-source gross income, $70 of expense properly allocated to foreign-source gross income, and $10 of expense that cannot definitely be allocated to U.S.- or foreign-source gross income, will split that $10 proportionately (in this case, evenly) between U.S. and foreign gross income. The taxpayer will thus have $15 of U.S.-source taxable income ($100-$80-$5) and $25 of foreign-source taxable income ($100-$70-$5).

The Code generally articulates only the broad principles of how expenses reduce U.S. and foreign income, leaving it up to the Treasury to provide detailed rules for the allocation and apportionment of expenses.

Source rules for computing taxable income—Regulation sec. 1.861-8

Treasury Regulation sec. 1.861-8 ("the Regulation") applies in determining foreign-source taxable income for calculation of the foreign tax credit limitation.[20] It provides specific rules for the treatment of expenses, losses, and certain other deductions. Generally, as the first step in calculating foreign-source income, the Regulation requires a taxpayer to allocate his deductions to individual "classes" of gross income.[21] However, special rules are provided for the allocation and apportionment of R&D expenses; in general, R&D expenses are allocated to all income, regardless of class, reasonably connected with relevant product categories.

When a particular expense relates to a class of gross income including both U.S.- and foreign-source income, the Regulation generally prescribes no single method for apportioning deductions between the two. The Regulation states that the method used in ap-

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[19] Section 863 specifies that items of gross income, expenses, losses, and deductions other than those specified in sections 861 and 862 are to be allocated or apportioned to sources within or outside of the United States under regulations prescribed by the Secretary of the Treasury. Section 863 also contains general rules for computing taxable income when gross income derives from sources partly within and partly outside of the United States, as well as source rules for transportation income, space and ocean income, and international communications income.

[20] It also applies in determining the taxable income of a taxpayer from specific sources and activities for purposes of a number of other "operative" Code sections. The operative section for the foreign tax credit limitation is section 904(a).

[21] These classes include royalties, dividends, compensation for services, and gross income derived from business. A taxpayer must allocate his deductions on the basis of the factual relationships that exist between his deductions and his classes of gross income. The Regulation expresses this factual relationship concept this way: a deduction generally reduces a class of gross income if the deduction is incurred as a result of, or incident to, an activity, or in connection with property, from which the class of gross income has been, is, or could reasonably have been expected to be derived. If a deduction does not bear a definite relationship to a class of gross income, it is ordinarily treated as definitely related and allocable to all of the taxpayer's gross income; "all of the taxpayer's gross income" is then considered a class of gross income for purposes of applying the remainder of the Regulation. After a deduction has been allocated to a class of gross income, it is apportioned between a "statutory grouping" of gross income within the class, such as foreign-source gross income, and a "residual grouping," consisting of all other gross income in the class. The statutory grouping depends on the operative Code section. For example, when the operative Code section is 904(a) (relating to the foreign tax credit limitation) the statutory grouping is foreign-source gross income.

portioning a deduction must reflect the factual relationship between the deduction and the gross income. The Regulation contains a nonexclusive list of bases and factors to consider. Some of these relevant bases and factors are: a comparison of units sold (between sales yielding foreign-source and sales yielding U.S.-source gross income), a comparison of profit contributions, a comparison of gross sales or receipts, and a comparison of amounts of gross income. The Regulation's list contemplates that the higher the proportion of foreign sales or foreign gross income (for example), the greater, logically, the proportion of expenses attributable to foreign-source income.

Several types of deductions are considered not definitely related to any gross income under the Regulation. These include, for example, the deductions for medical expenses and charitable contributions. These deductions reduce foreign and U.S. gross income pro rata.

The Regulation sets forth detailed allocation and apportionment rules for certain types of deductions, including those for research and development (R&D) expenditures, interest expenses, stewardship expenses, and legal and accounting fees and expenses. A detailed discussion of the rules for R&D deductions appears below.[22]

The Regulation was promulgated in its present form in 1977. It incorporates a number of significant modifications to a 1973 proposed revision[23] of the original Regulation, which was adopted in 1957.[24] These modifications were made in response to taxpayer comments on the proposed 1973 revision.[25]

Regulatory allocation and apportionment rules for R&D deductions

In general

The R&D rules of Treasury Regulation sec. 1.861-8(e)(3) ("the R&D Regulation") embody to some extent each of three approaches for allocation and apportionment of R&D expenses.[26] One approach, the place-of-performance method, assumes that these deductions relate straight-forwardly to the place where the R&D occurs. Another approach, the sales (or gross receipts) method, apportions the burden of R&D expense among the sources of the taxpayer's sales receipts. A third approach, the gross income method, apportions R&D expense among the sources of the taxpayer's gross income. The Issues section of Part III of this pamphlet examines the strengths and weaknesses of these approaches.

The R&D Regulation takes as its premise that R&D "is an inherently speculative activity, that findings may contribute unexpected benefits, and that the gross income derived from successful research and development must bear the cost of unsuccessful research and development." The R&D Regulation prescribes rules for

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[22] In addition, the Regulation provides rules relating to deductions in excess of gross income; exempt, excluded, and eliminated income; substantiation of allocations and apportionments; and intercompany pricing adjustments under section 482 or other sections of the Code.

[23] 38 Fed. Reg. 15,840 (1973).

[24] T.D. 6258, 1957-2 C.B. 368.

[25] An earlier proposed revision of the Regulation, published in 1966, 31 Fed. Reg. 10,405 (1966), was withdrawn at the time the 1973 proposed revision was published.

[26] Temporary modifications under the Tax Reform Act of 1986 to specific provisions of the Regulation are noted in the discussions of those specific provisions.

allocating and apportioning these expenses between U.S.-source and foreign-source income.[27]

As explained in more detail below, the Economic Recovery Tax Act of 1981 (ERTA), the Deficit Reduction Act of 1984 (DEFRA), and the Consolidated Omnibus Budget Reconciliation Act of 1985 (COBRA) suspended these rules as they relate to U.S.-based R&D activity through taxable years beginning on or before August 1, 1986; they provided that taxpayers were to allocate all R&D deductions for R&D conducted in the United States to U.S.-source income during the suspension period.

For taxable years beginning during the period after August 1, 1986, and on or before August 1, 1987, the Tax Reform Act of 1986 provides for a temporary modification of the R&D Regulations. As described more fully below, the effect of the modification is generally to attribute more U.S.-based R&D to U.S.-source gross income than would be attributed under the (unmodified) R&D Regulation.

R&D expenses generally

As a general rule, business expenditures to develop or create an asset which has a useful life that extends beyond the taxable year, such as expenditures to develop a new product or improve a production process, must be capitalized. However, Code section 174 permits a taxpayer to elect to deduct currently the amount of "research or experimental expenditures" incurred in connection with the taxpayer's trade or business.

The Code does not specifically define "research or experimental expenditures" eligible for the section 174 deduction election (except to exclude certain costs). Treasury regulations (sec. 1.174-2(a)) define this term to mean "research and development costs in the experimental or laboratory sense." This includes generally all such costs incident to the development of an experimental or pilot model, a plant process, a product, a formula, an invention, or similar property. The present regulations provide that qualifying research expenditures do not include expenditures "such as those for the ordinary testing or inspection of materials or products for quality control or those for efficiency surveys, management studies, consumer surveys, advertising, or promotions."

Product categories

The R&D Regulation associates R&D expenses with income from product categories. For example, it contemplates that R&D performed for a taxpayer's chemical business will not reduce that taxpayer's income from a separate textile mill business. It provides that R&D expenditures which a taxpayer deducts under Code section 174 are ordinarily considered definitely related to all income "reasonably connected" with one or more product categories of the taxpayer. The R&D Regulation enumerates 32 product categories based on two-digit classifications within the Standard Industrial Classification ("SIC") system.

Ordinarily, a taxpayer may divide R&D expenditures among relevant product categories, but not among subdivisions within the cat-

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[27] The Regulation also prescribes rules for the allocation and apportionment of deductions between pairs of gross income groupings other than U.S.-source and foreign-source income.

egories. When R&D is conducted with respect to multiple product categories, the categories may be aggregated for allocation purposes. When R&D cannot be clearly identified with one or more product categories (e.g., basic research), it is considered conducted with respect to all the taxpayer's product categories.

R&D to meet legal requirements

The R&D Regulation contemplates that taxpayers will sometimes undertake R&D solely to meet legal requirements (like noise pollution standards). In some such cases, the R&D cannot reasonably be expected to generate income (beyond de minimis amounts) outside a single geographic source. If so, those deductible R&D expenses reduce gross income only from the geographic source that includes that jurisdiction (Reg. sec. 1.861-8(e)(3)(i)(B)). For example, an R&D deduction for research performed solely to meet noise pollution standards mandated by the U.S. Government and which cannot reasonably be expected to generate significant foreign-source income reduces only U.S.-source income.

After allocating deductions to meet legal requirements, the taxpayer generally matches income to deductions on the basis of the place of performance of the R&D and the source of income from sales of products. At the taxpayer's election, the matching can involve the source of gross income.

Sales method of apportionment, step 1: Exclusive place-of-performance apportionment

The R&D Regulation presupposes that the place where R&D is performed (such as a laboratory) bears a significant relation to the source of the income it produces. Generally, the regulation allows 30 percent of deductible R&D expenses to reduce gross income from the source where over half of the taxpayer's total deductible R&D expenses are incurred (Reg. sec. 1.861-8(e)(3)(ii)(A)).[28] For example, assume that a U.S. manufacturer of gasoline engines sells them in the United States and abroad and performs all its R&D in the United States. It first subtracts 30 percent of its R&D deduction from U.S.-source income. (The manufacturer generally allocates the remaining 70 percent on the basis of sales, discussed below.)

The Regulation states that such place-of-performance apportionment "reflects the view that research and development is often most valuable in the country where it is performed, for two reasons. First, research and development often benefits a broad product category, consisting of many individual products, all of which may be sold in the nearest market but only some of which may be sold in foreign markets. Second, research and development often is utilized in the nearest market before it is used in other markets, and, in such cases, has a lower value per unit of sales when used in foreign markets."

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[28] This rule applies to expenses remaining after allocation under the legal requirements test. Moreover, under the temporary modifications enacted by the Tax Reform Act of 1986, the fraction of R&D allocated to the place of performance is 50 percent, rather than 30 percent.

Optional increase in place-of-performance apportionment

A taxpayer has the opportunity to apportion more than 30 percent of its R&D deduction exclusively to the source where R&D is performed if it can establish that a significantly higher percentage is warranted because the R&D is reasonably expected to have a very limited or long-delayed application outside that geographic source. Taxpayers will choose this method if foreign use of R&D results is minimal. There is no obligation to use this method (even if U.S. use of R&D results is minimal). Taxpayers that use this method must allocate any remaining portion of their R&D deduction only on the basis of sales.

To establish that R&D is reasonably expected to have a very limited application outside the United States, a taxpayer generally must show that only some of its products within the relevant product category are sold outside the United States. This involves a comparison of the taxpayer's own domestic and foreign sales plus sales of other users of the taxpayer's R&D: uncontrolled parties that sell products incorporating intangible property purchased or licensed from the taxpayer, and controlled corporations that can reasonably be expected to benefit from any of the taxpayer's research expense connected with the product category.[29]

To establish that R&D is reasonably expected to have a long-delayed application outside the United States, a taxpayer generally must compare the commercial introduction of its own products and processes in the United States and foreign markets and commercial introduction by other users of its R&D. To evaluate the delay in the application of research findings in foreign markets, the taxpayer is to use a safe haven discount rate of 10 percent per year unless he can establish that another discount rate is more appropriate.[30]

Sales method of apportionment, step 2: Apportionment on the basis of sales

After a taxpayer makes a place-of-performance apportionment, it must apportion the amount of its R&D deduction remaining, if any, on the basis of sales.[31] Generally, under this method, the remaining R&D deduction amount is apportioned between domestic- and foreign-source income on the basis of relative amounts of domestic and foreign sales receipts (Reg. sec. 1.861-8(e)(3)(ii)(B)).

Suppose, for example, that a taxpayer has foreign sales of $280, $200 in textiles and $80 in paper products, U.S. sales of $220, $200 in textiles and $20 in paper products, textile-related R&D expense of $100, and paper product related-R&D expense of $50. Assume that the taxpayer cannot allocate any portion of its R&D deduction under the legal requirements test and that the taxpayer is entitled to no place-of-performance allocation because no more than half of

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[29] For purposes of comparing product sales within categories, products in "nonmanufactured" categories are limited to those listed in the Standard Industrial Classification ("SIC") manual; products in "manufactured" categories are limited to those enumerated at a seven-digit level in the U.S. Census Bureau's Numerical List of Manufactured Products.

[30] For these purposes, there is no requirement that the term "product" be limited to those defined in the SIC or Census Bureau classifications.

[31] Under the Tax Reform Act of 1986 temporary modifications, a taxpayer that makes a place-of-performance apportionment may alternatively apportion the remaining deduction on the basis of gross income, as described below.

its R&D deduction is accounted for by R&D activities in any single country. The textile sales are in, and the textile-related R&D is connected with, the SIC two-digit product category "Textile mill products" (SIC major group number 22). The paper product sales are in, and the paper product-related R&D is connected with, the SIC product category "Paper and allied products" (SIC major group number 26). The textile-related R&D expense of $100 is apportioned $50 to foreign-source income and $50 to U.S.-source income because the taxpayer had $200 in foreign sales in the Textile mill product category and $200 in U.S. sales in the Textile mill products category. The paper-product-related R&D of $50 is apportioned $40 to foreign-source income and $10 to U.S. source income because the taxpayer had $80 in foreign sales in the Paper and allied products category and $20 in U.S. sales in the Paper and allied products category.

Sales, for purposes of the sales method of apportionment, include amounts received from the lease of equipment. In addition, a "look-through" approach treats certain sales of parties other than the taxpayer as sales of the taxpayer in computing the apportionment of the taxpayer's R&D deduction between domestic- and foreign-source income. Under this look-through approach, the taxpayer's $200 in foreign textile sales in the above example might actually be sales of a foreign subsidiary licensing technology from the taxpayer or those of an uncontrolled party that has purchased secret processes from the taxpayer. The apportionment in such cases would be the same as in the preceding example.

The look-through rules provide that an uncontrolled party's sales of products involving intangible property obtained from the taxpayer are fully taken into account in determining the taxpayer's apportionment (and the apportionment of any other member of a controlled group of corporations to which the taxpayer belongs) if the uncontrolled party can reasonably be expected to benefit from the research expense connected with the product category (or categories). An uncontrolled party can reasonably be expected to benefit from a research expense if the taxpayer can reasonably be expected to license, sell, or transfer intangible property to that uncontrolled party. In the case of licensed products, if the amount of sales of the products is unknown, a reasonable estimate is to be made. Where intangible property is sold outright, and in cases where a reasonable estimate of sales of licensed products cannot be made, the sales of products are considered equal to 10 times the amount received or accrued for the intangible property during the taxpayer's taxable year.

A controlled corporation's sales of products are taken into account, to the extent explained below, if the controlled corporation can reasonably be expected to benefit from the taxpayer's research expense connected with the product category (or categories). A controlled corporation can reasonably be expected to benefit from the taxpayer's research expense if the taxpayer can be expected to license, sell, or transfer intangible property to that corporation, or transfer secret processes to that corporation. Past experience with research and development is to be considered in determining reasonable expectations. However, if the controlled corporation has entered into a bona fide cost-sharing arrangement (in accordance

with Treasury Regulation section 1.482-2(d)(4)) with the taxpayer for the purpose of developing intangible property, then that corporation is not reasonably expected to benefit from the taxpayer's share of the research expense.

A controlled corporation's sales of products within a product category are taken into account to the extent of the greater of (1) the amount of sales that would have been taken into account if the controlled corporation were an uncontrolled party and if any intangible property contributed by the taxpayer to the controlled corporation were treated as a license of that intangible property; or (2) the amount of sales that bear the same proportion to total sales of the controlled corporation as the taxpayer's voting power in the controlled corporation bears to the total voting power in the corporation. However, sales between or among controlled corporations or the taxpayer are not to be taken into account more than once.

Sales, for purposes of the sales method of apportionment, do not include sales of products sold solely within the United States if the taxpayer has, on account of such sales, made an optional place-of-performance apportionment of significantly greater than 30 percent of his R&D deduction to U.S. income and established that the R&D connected with the products sold is reasonably expected to have a very limited application outside the United States (see paragraph (g) of the Regulation, Example 10).

Optional gross income methods of apportionment

Sometimes, using an "optional gross income method," a taxpayer may reduce allocation of R&D expenses to foreign-source income by as much as 50 percent.[32] Subject to certain limitations, a taxpayer may elect to apportion his R&D deduction under one of two optional gross income methods instead of the sales method. Under the optional method, a taxpayer generally apportions the remainder of his R&D deduction (after allocation under the legal requirements test but not the place-of-performance test) on the basis of relative amounts of gross income from domestic and foreign sources (Reg. sec. 1.861-8(e)(3)(iii)).[33]

The basic limitation on the use of optional gross income methods is that the respective portions of a taxpayer's R&D deduction apportioned to U.S.- and foreign-source income using a gross income method may not be less than 50 percent of the respective portions that would be apportioned to each such income grouping using the sales apportionment method (with the latter's exclusive place-of-performance allocation, typically 30 percent).[34] If this 50-percent test is satisfied when deductions (other than those allocated under the legal requirements test) are apportioned ratably on the basis of gross income, then, under "Option One," the taxpayer may use the

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[32] Under the Tax Reform Act of 1986 temporary modifications, taxpayers can potentially reduce allocation of R&D expenses to foreign-source income without regard to this 50 percent limit.

[33] Under the Tax Reform Act of 1986 temporary modifications, taxpayers using optional gross income methods are entitled to allocate 50 percent of U.S.-based R&D (after allocation under the legal requirements test) to U.S.-source income before apportioning the remainder to foreign sources based on gross income.

[34] This limitation is suspended for one year by the Tax Reform Act of 1986.

income-based ratable apportionment to compute source-specific taxable income, without limitation.

If, on the other hand, a ratable apportionment based on gross income fails the 50-percent test, then, under "Option Two," the taxpayer apportions 50 percent of the amount of its R&D deduction which would have been apportioned under the sales method to that income grouping (i.e., U.S.- or foreign-source income) to which an income-based ratable apportionment allocates less than the required 50 percent. The remaining amount of its R&D deduction is apportioned to the other income grouping.

A taxpayer electing an optional gross income method, then, may be able to reduce the amount of its R&D deduction apportioned to foreign-source income to as little as one-half of the amount that would be apportioned to foreign-source income under the sales method.

For example, consider a taxpayer with $110 of U.S.-performed R&D expense and equal U.S. and foreign sales. Assume that $10 of the R&D expense is to meet legal requirements and is allocated to U.S.-source income. Under the sales method, 30 percent ($30) of the remaining $100 is exclusively apportioned to U.S.-source income and the rest ($70) is divided evenly between U.S.- and foreign-source income. Under an optional gross income method, the $35 foreign-source R&D allocation could be reduced as much as 50 percent, to $17.50. This could occur, for example, if the foreign sales were made by a foreign subsidiary that did not repatriate earnings to the U.S. corporation.

The optional gross income methods apply to all of a taxpayer's gross income, not gross income on a product category basis. If any member of an affiliated group which files a consolidated return uses an optional gross income method in a taxable year, then all members joining that return must use an optional gross income method in that taxable year.

Changes from 1973 proposed Regulation

The R&D rules of the present Regulation reflect a number of changes in and additions to the R&D rules included in an earlier proposed version of the Regulation issued in 1973.[35] Many of these modifications were liberalizations made in response to the comments of taxpayers on the 1973 proposed Regulation. The changes and additions include:

(1) Addition of the place-of-performance apportionment rules, that generally let a taxpayer apportion 30 percent or more of its R&D deduction to U.S.-source income;

(2) Addition of the legal requirements test, that lets a taxpayer allocate a portion of its R&D deduction solely to U.S.-source income when the corresponding R&D expenditures generate minimal income outside the United States and are mandated by a legal requirement (such as a U.S. Food and Drug Administration testing requirement);

(3) The division of an R&D deduction between product categories rather than general classes of gross income such as royalties from

[35] 38 Fed. Reg. 15,840 (1973).

licensing intangible property or dividends; this change reduces allocations to foreign-source income of R&D expenditures related to products that are substantially different from the products that generate the foreign-source income; and

(4) The optional gross income methods of apportionment, which expressly permit a taxpayer to apportion some or all of its R&D deduction on a gross income-to-gross income basis, subject to limitations.

Treasury study and temporary suspension of Regulation

In the Economic Recovery Tax Act of 1981 (ERTA), the Congress directed the Treasury Department to study the impact of the R&D rules of Treasury Regulation sec. 1.861-8 on research activities conducted in the United States and on the availability of the foreign tax credit.

ERTA also provided that, for a taxpayer's first two taxable years beginning after the date of its enactment (August 13, 1981), all research and experimental expenditures (within the meaning of Code sec. 174) which were paid or incurred in those taxable years (and only in those taxable years) for research activities conducted in the United States were to be allocated or apportioned to sources within the United States for all purposes under the Code (sec. 223 of ERTA). ERTA did not change the Regulation's allocation rules for deductions other than that for research and experimental expenditures.

One reason for enacting this suspension of the Regulation's R&D rules as they relate to U.S.-based research activity (the moratorium) was that foreign countries would not, in some instances, allow deductions under their tax laws for expenses of research activities conducted in the United States and allocated by the R&D Regulation to foreign-source income. It was argued that this disallowance results in unduly high foreign taxes and that, absent changes in the foreign tax credit limitation, U.S. taxpayers would lose or defer utilization of foreign tax credits. Thus, went the argument, there was incentive for taxpayers to shift their research expenditures to those foreign countries whose laws disallow tax deductions for research activities conducted in the United States, but allow tax deductions for research expenditures incurred locally.

Accordingly, Congress concluded that the Treasury should study the impact of the allocation of research expenses under the Regulation on U.S.-based research activities.

Treasury study

On June 14, 1983, the Secretary of the Treasury submitted its report on the mandated study to the House Committee on Ways and Means and the Senate Committee on Finance.[36] In summary, the Treasury report concluded that:

- Had the Regulation fully been in effect in 1982, the $37 billion in privately financed domestic R&D spending in 1982 would have been reduced by between $40 million and $260 million—i.e., by between 0.1 and 0.7 percent. Most of the reduction would have repre-

[36] Department of the Treasury, *The Impact of the Section 861-8 Regulation on U.S. Research and Development* (June 1983).

sented a net reduction in overall R&D undertaken by U.S. corporations and their foreign affiliates, rather than a transfer of R&D abroad.

- The moratorium reduced U.S. tax liabilities. If the R&D rules in the Regulation had been in effect in 1982, U.S. tax liabilities of U.S. firms would have been $100 million to $240 million higher.
- The moratorium reduced the tax liabilities only of firms with excess foreign tax credits. Whether or not a firm had excess credits did not seem to be closely related to the level of its R&D efforts.
- The moratorium had its most significant effect on large, mature multinationals, as opposed to small, relatively young high-technology companies. Of the Regulation's $100 million to $240 million estimated increase in U.S. tax liabilities, about 85 percent was estimated to be accounted for by 24 U.S. firms on the list of the 100 largest U.S. industrial corporations compiled by *Fortune Magazine*.
- An allocation of R&D expense to foreign income may increase a taxpayer's worldwide tax liability if the foreign government does not allow the apportioned expense as a deduction and the foreign tax paid exceeds the taxpayer's foreign tax credit limitation. Some allocation to foreign income, however, is appropriate on tax policy grounds when domestic R&D is exploited in a foreign market and generates foreign income. If an allocation is not made, foreign-source taxable income will be too high and the higher limitation may allow the credit for foreign tax to reduce U.S. tax on domestic-source income.
- The Regulation's R&D rules reflect significant modifications of the 1973 proposed Regulation in response to taxpayer comments. Compared to the 1973 version of the Regulation, these modifications allow taxpayers to allocate less R&D expense to foreign income and recognize that R&D conducted in the United States may be most valuable in the domestic market.

On the ground that a reduction in R&D might adversely affect the competitive position of the United States, the report stated that the Treasury supported a two-year extension of the ERTA moratorium. The rationale for this recommendation was to give Congress an opportunity to consider the findings of the report while Congress and the Administration worked to develop a coherent national program of R&D incentives.

Believing that it was appropriate both (a) to require allocation of deductions between U.S.- and foreign-source income, and (b) to provide tax laws generally encouraging U.S.-based research activities, Congress granted the recommended two-year extension of the moratorium in the Deficit Reduction Act of 1984 (DEFRA). The extension was expected to give Congress and the Treasury an opportunity to assess more fully the impact of the R&D Regulation on U.S.-based research activity and to compare the relative effectiveness of 100-percent allocation of U.S.-based R&D to U.S.-source income, on the one hand, versus other possible research incentives. A further one-year extension of the moratorium was enacted in the Consolidated Omnibus Budget Reconciliation Act of 1985 (COBRA). Under the moratorium as enacted and extended through COBRA, taxpayers allocated all expenses of U.S.-based R&D to U.S.-source income in all taxable years beginning after August 13, 1981, and on or before August 1, 1986.

Tax Reform Act of 1986

Congress enacted temporary modifications to the R&D Regulation in the Tax Reform Act of 1986 (the 1986 Act or the Act), thus further suspending some, but not all, of the full impact of the Regulation. During taxable years beginning in the 12-month period after August 1, 1986, and on or before August 1, 1987, the R&D Regulation is essentially liberalized in three respects. The first liberalization is that, after allocating any R&D undertaken to meet source-specific legal requirements, 50 percent of all remaining deductions for U.S.-based research (called "qualified research and experimental expenditures" under the 1986 Act) are apportioned to U.S.-source income. The Act thus has the effect of increasing the exclusive place-of-performance apportionment percentage for U.S.-based research expense from 30 percent (under the Regulation's sales method) to 50 percent.

The Act further provides that, for the specified one-year period, the R&D expenditures that remain after any legal requirements allocation and the 50-percent exclusive place-of-performance apportionment will be apportioned either on the basis of sales or gross income. Thus, the Act's second effective liberalization of the regulation is to allow exclusive place-of-performance apportionment to taxpayers who use the optional gross income method, rather than only to taxpayers that use the standard sales method of apportionment. Third, the Act has the effect of allowing taxpayers to use the optional gross income method to reduce the R&D allocated to foreign-source income to less than half of what the allocation would be under the standard sales method.

Provisions of the Act directly addressing R&D allocations are not the only Act provisions substantially affecting the interaction of R&D expenses and the foreign tax credit. As described above, the foreign tax credit limitation is the product of (a) pre-credit U.S. tax and (b) a fraction equal to foreign-source taxable income over worldwide taxable income. The Act's temporary modification of the R&D Regulation generally increases the fraction (for a limited period). By itself, this increase would tend to raise the credit limitations of taxpayers with R&D expenses and foreign-source income, and thus reduce the overall tax liability of such taxpayers previously in an excess credit position. On the other hand, by lowering corporate tax rates from 46 to 34 percent, the Act decreased taxpayers' pre-credit U.S. tax. By itself, this decrease would tend to reduce all taxpayers' foreign tax credit limitations, thus increasing the number of U.S. taxpayers with excess foreign tax credits, and increasing the likelihood that any change in the R&D allocation rules will affect a taxpayer's overall tax liabilities.

Foreign countries' source rules for deductions [37]

It appears that few countries have developed detailed rules governing the allocation of expenses between foreign and domestic

[37] This section is based chiefly on the collection of studies of the source, allocation, apportionment, and related rules of 24 countries published 7 years ago by the International Fiscal Association (IFA). *Rules for determining income and expenses as domestic or foreign*, LXVb Cahiers de droit fiscal international (1980). While the discussion in this pamphlet also incorporates the

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income (or taxable and nontaxable income). Thus, specific allocation rules for R&D expense, resembling those of Treasury Regulation sec. 1.861-8, are absent in most countries. This lack of detailed allocation rules may reflect a general lack of attention to the allocation issue. The most common approach to allocations appears to be a facts and circumstances test or a reasonableness test.

Many countries, however, recognize the general principle that expenses, to be deductible against income from a particular source, should be related to that income. These countries include Argentina, Australia, Canada, Finland, Hong Kong, Israel, Luxembourg, the Netherlands, New Zealand, South Africa, and the United Kingdom.

Some countries apparently have specific rules for R&D expense. Under Finnish law, for example, R&D expenses generally are deductible from the category or categories of income to which they relate. In New Zealand, R&D expenditures must be demonstrated to yield some benefit to the New Zealand economy to be deductible against New Zealand income. Switzerland, for purposes of treaty foreign tax credits, deems 50 percent of foreign royalties to represent expenses. In Japan, however, R&D expenses will not be allocated to offset foreign-source income. In addition, Canada apparently requires no allocation of R&D expense to foreign-source income.

Deductions in foreign countries for U.S. R&D

U.S. income tax treaties generally require our treaty partners to allow appropriate deductions for expenses incurred in the United States. Generally, however, under the treaties, these countries are required to allow deductions only for R&D expenses directly related to local income. Some R&D conducted in the United States within a product category that includes products sold in a foreign country may not bear a direct relation to local income. A foreign country's disallowance of deductions for such R&D when those amounts are allocated to foreign income under the R&D Regulation may, therefore, comport with its treaty obligations.

Even absent a treaty, a deduction for overseas R&D is within the scope of many countries' general rules governing deductions for overseas expenditures. Denmark, the Federal Republic of Germany, Ireland, the United Kingdom, and South Africa, for example, apparently do not generally distinguish in their internal law between domestic- and foreign-based R&D expenses for purposes of the deduction each permits for R&D expenses. However, foreign countries that recognize the right of taxpayers to deduct overseas expenses may not allow deductions in sufficient amounts to offset the impact of the R&D Regulation. Additionally, such countries may impose gross withholding taxes on royalty payments to U.S. companies for that R&D, potentially offsetting any tax benefits derived from favorable deduction rules.

Mexico does not generally permit foreign enterprises subject to Mexican income tax to deduct payments made to foreign companies not subject to Mexican income tax. The expenses incurred in re-

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fruits of more recent research on selected topics, conducted by the staff of the Law Library, Library of Congress, this pamphlet does not purport to be based on a comprehensive update of IFA's 1980 survey.

search and development, administrative and overhead expenses, and stewardship expenses normally would be included within the payments that the enterprise located in Mexico makes to the foreign country.

While some foreign countries may prohibit direct deductions for U.S.-performed R&D, the foreign subsidiary of a U.S. company may be able to take a related deduction in some cases by paying the U.S. parent an increased price for technology and components to reflect R&D costs. Transfer prices paid by foreign subsidiaries for technology and components often are deductible under foreign tax laws. On the other hand, if deductions from foreign taxable income can be taken for the value of technology developed in the United States and then transferred abroad or incorporated into products sent abroad, such deductions would generally be of less benefit than a deduction for R&D expenses when incurred; R&D tends to generate costs well before it generates transferable benefits.

Comparison of allocation methods

This section compares four methods of deducting R&D expenses by a taxpayer with $10,000 of U.S. sales and $10,000 of foreign sales (through a foreign branch). The taxpayer has $1,000 of U.S.-source taxable income and $1,000 of foreign-source taxable income before deduction of R&D expense. The taxpayer incurs $400 of R&D expense, all in the United States.

Table 1 shows the calculation of U.S. and foreign income under four methods. The first method, based on the proposed 1973 regulation, allocates R&D expense solely on the basis of sales (gross receipts). The second method is one of those available in the 1977 Regulation. Under the 1977 Regulation, the taxpayer described above is first permitted to apportion 30 percent ($120) of R&D expense to U.S.-source income (place-of-performance apportionment). The remaining $280 ($400-$120) of R&D expense is split equally between U.S.- and foreign-source income on the basis of gross receipts, which results in $140 of foreign-source and $260 of U.S.-source R&D expense (sales method apportionment).[38] The third method of apportionment, provided under the ERTA/DEFRA/COBRA moratorium, allocates the full $400 of R&D expense to U.S.-source income (place-of-performance apportionment). The fourth method, pursuant to the 1986 Act modifications to the 1977 Regulation, first apportions $200 of R&D expense to U.S.-source income based on place of performance, then splits the remaining $200 evenly between U.S.- and foreign-source income, resulting in a $100 apportionment of R&D expense to foreign-source income.

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[38] In these examples, the optional gross income methods do not yield a smaller foreign-source apportionment of R&D expense than the sales method. Operation in subsidiary form instead could reduce the foreign-source gross income to zero if the taxpayer did not repatriate income from the foreign subsidiary. In that case, an optional gross income method could be used to reduce the foreign-source apportionment of R&D expense by 50 percent under the unmodified Regulation, from $140 to $70, or by 100 percent under the temporary 1986 Act modification. Either of these allocations would be more favorable to the taxpayer than the allocations resulting from full repatriation of the foreign subsidiary's earnings.

Table 1.—Example of Apportionment of Domestic R&D Expense Under 1.861-8 Regulation and Moratorium

Item	U.S.-source	Foreign-source	Total
Gross receipts	$10,000.00	$10,000.00	$20,000.00
Income before R&D	1,000.00	1,000.00	2,000.00
R&D apportionment [a]			
1) 1973 Proposal	200.00	200.00	400.00
2) 1977 Regulation	260.00	140.00	400.00
3) Moratorium	400.00	0	400.00
4) 1986 Act	300.00	100.00	400.00
Income after R&D [b]			
1) 1973 Proposal	800.00	800.00	1,600.00
2) 1977 Regulation	740.00	860.00	1,600.00
3) Moratorium	600.00	1,000.00	1,600.00
4) 1986 Act	700.00	900.00	1,600.00
U.S. tax on worldwide income (pre-credit) [c]			
1) 1973 Proposal	272.00	272.00	544.00
2) 1977 Regulation	251.60	292.40	544.00
3) Moratorium	204.00	340.00	544.00
4) 1986 Act	238.00	306.00	544.00

[a] Apportionment of R&D expense described in text.
[b] Income after R&D equals income before R&D reduced by the R&D apportionment.
[c] U.S. tax on worldwide income (before the foreign tax credit) equals income after R&D times the post-June 1987 U.S. corporate tax rate (34 percent).

Table 2 illustrates the case where the taxpayer operates in a low-tax country and does not have excess foreign tax credits. The foreign country imposes tax at a 25-percent rate with no deduction for U.S.-performed R&D expense. The foreign taxable income is $1,000 (not reduced by R&D expense), and the foreign tax is $250. In this situation, the taxpayer would pay $294 of U.S. tax (after credit) under all four methods of apportionment. The total tax liability of $544 ($250 plus $294) is identical to the tax which would be owed if the taxpayer moved his foreign operations to the United States. Thus, the U.S. R&D apportionment rules are a matter of indifference for taxpayers who have no excess credits.

Table 2.—Tax Liability Under 1.861-8 Regulation and Moratorium: U.S. Taxpayer Without Excess Foreign Tax Credits

[25% foreign tax rate without a deduction for U.S. R&D]

Item	1973 Proposed Regs.	1977 Regs. (1.861-8)	Moratorium	1986 Act
U.S. tax on domestic income	$272.00	$251.60	$204.00	$238.00
U.S. tax on foreign income	272.00	292.40	340.00	306.00

Table 2.—Tax Liability Under 1.861-8 Regulation and Moratorium: U.S. Taxpayer Without Excess Foreign Tax Credits—Continued

[25% foreign tax rate without a deduction for U.S. R&D]

Item	1973 Proposed Regs.	1977 Regs. (1.861-8)	Moratorium	1986 Act
Foreign tax @ 25% rate	250.00	250.00	250.00	250.00
Foreign tax credit	−250.00	−250.00	−250.00	−250.00
Total tax liability	$544.00	$544.00	$544.00	$544.00
Average tax rate (percent)	34.0%	34.0%	34.0%	34.0%

Table 3 illustrates the case where the taxpayer operates in a relatively high-tax country and has excess foreign tax credits. The foreign country imposes tax at a 40 percent rate with no deduction for U.S.-performed R&D expense.[39] The foreign taxable income is $1,000 (not reduced by R&D expense), and the foreign tax is $400. In this situation, the U.S. tax liability depends on the method of apportionment: $272 under the 1973 proposed regulation, $251.60 under the 1977 Regulation, $204.00 under the moratorium, and $238.00 under the 1986 Act; the taxpayer's total tax liability is lowest under the moratorium method of allocation. Under all four methods, the taxpayer's total tax liability exceeds the tax which would be owed if the taxpayer moved his foreign manufacturing operations to the United States. However, if the foreign country permits a deduction for R&D expense, then the total tax liability of the taxpayer could perhaps be reduced.

Table 3.—Tax Liability Under 1.861-8 Regulation and Moratorium: U.S. Taxpayer With Excess Foreign Tax Credits

[40% foreign tax rate without a deduction for U.S. R&D]

Item	1973 Proposed Regs.	1977 Regs. (1.861-8)	Moratorium	1986 Act
U.S. tax on domestic income	$272.00	$251.60	$204.00	$238.00
U.S. tax on foreign income	272.00	292.40	340.00	306.00
Foreign tax @ 40% rate	400.00	400.00	400.00	400.00
Foreign tax credit	−272.00	−292.40	−340.00	−306.00
Total tax liability	$672.00	$651.60	$604.00	$638.00
Average tax rate	42.0%	40.7%	37.8%	39.9%

[39] Prior to the 1986 Act, a foreign country imposing tax at a 40-percent rate would have been a low-tax country for these purposes.

Legislative Proposal

S. 716—Senators Wallop, Baucus, Danforth, Moynihan, Chafee, Roth, Boren, Pryor, Heinz, Durenberger, Armstrong, Riegle, Rockefeller, Symms, Lautenberg, and McCain

(Allocation of R&D Expenses to U.S. and Foreign Income)

S. 716 [40] would retroactively reinstate, on a permanent basis, the R&D allocation rules provided on a temporary basis in ERTA, DEFRA, and COBRA. S. 716 would add a new subsection (f) to Code section 861 providing generally that all research and experimental expenditures (within the meaning of sec. 174) attributable to activities conducted in the United States are to be allocated to income from sources within the United States.

S. 716 would apply retroactively to taxable years beginning after August 1, 1986, and would expressly repeal the 1986 Act provision modifying the R&D Regulation.

[40] Companion legislation, H.R. 1116, has been introduced in the House of Representatives.

Issues

1. Equity of the 1977 Sourcing Rules: The Excess Credit Issue

The basic reason for the limitation on the amount of the foreign tax credit is to protect the U.S. Treasury's tax base. With an unlimited credit, foreign countries effectively could levy a tax on U.S.-source income by raising their tax rates above 34 percent. The U.S. Treasury would bear the burden of this foreign tax, to which taxpayers could be indifferent. In other words, the Treasury would lose U.S. tax revenue on U.S.-source income.

As a consequence of limiting the foreign tax credit, a firm that operates in a high tax foreign country may pay more tax than a similar firm operating exclusively in the United States. The added tax burden is equal to the difference between the U.S. tax on (the U.S. definition of) foreign-source income and the foreign tax on the (foreign definition of) foreign-source income. This additional burden can be large when (1) the foreign tax rate is much higher than 34 percent, and/or (2) the foreign definition of the tax base is much broader than the U.S. definition of foreign-source income.

Opponents of the R&D allocation rules in Treas. Reg. sec. 1.861-8 argue that those rules are unfair since, in certain situations, firms are denied the effect of a full deduction for domestic R&D expense. This occurs when foreign taxes exceed U.S. taxes on foreign-source income because the foreign country denies a deduction for a share of U.S.-performed R&D expense. Opponents argue that the foreign tax credit limitation should be increased by permanently revising or repealing the apportionment of domestic R&D expense under the Regulation.

Proponents of the Regulation argue, however, that to increase the credit unilaterally (by revising or repealing the R&D Regulation) would effectively allow foreign governments to levy a tax on U.S.-source income, the burden of which would be borne by the U.S. Treasury. In their view the fact that excess credits may arise does not prove that the R&D sourcing rules are flawed. In addition, they argue that because taxpayers with excess credits effectively are exempt from U.S. tax on their foreign income, the portion of their R&D deductions that help generate such foreign income should not, in effect, operate like a deduction from U.S. tax on U.S. taxable income. They point out that other expenses that generate tax-free income—such as interest expense on borrowings made to purchase tax-exempt securities—are generally not deductible.

2. Misallocation Under the Moratorium: The Double Deduction Issue

As noted above, advocates of proposals to allocate all U.S.-based R&D to U.S.-source income argue that companies in an excess credit position are denied the effect of a full deduction for U.S.-performed R&D. It can be argued, however, that under the proposed

rule, excess credit companies may obtain the equivalent of double deductions for at least a portion of U.S.-performed R&D expense.

This benefit potentially is available when a U.S. parent company deducts 100 percent of domestic R&D expense against U.S.-source income, and its foreign affiliate, in accordance with a tax treaty, deducts (against foreign tax) a royalty payment for exploitation of this R&D. Table 4 sets out the situation of a company that has excess credits due to earlier year operations in high-tax jurisdictions. The company does all its research in the United States and the research relates generally to both its manufacturing operations in the United States, and those of its foreign affiliate abroad. All manufacturing and research are assumed to fall within a single product category.

The foreign tax rate is assumed to be equal to the 34-percent U.S. tax rate. The parent company has $150 of worldwide net income before R&D expenses of $50. This $150 consists of $75 of net U.S.-source income and $75 of foreign-source income, the latter representing a distribution from the foreign affiliate of all of its net locally-generated proceeds. Gross worldwide sales receipts are equally divided between the parent and the affiliate. The foreign country allows the affiliate no deduction for U.S. R&D by the parent.

After the R&D deduction, worldwide taxable income is $100 and U.S. tax on worldwide income is $34. If all R&D expense is allocated to U.S.-source income, then foreign-source taxable income of the parent is $75, giving the parent a foreign tax credit limitation equal to three-quarters of $34, or $25.50.

Assume in the first instance that foreign tax on the affiliate equals $25.50, or 34 percent of $75, because none of the R&D expense offsets profits of the affiliate, and no royalty is payable to the parent in connection with use of its intangible property. The overall U.S. and foreign tax burden on the two corporations is $34. This is the same tax burden which the parent company would confront if it operated as one entity exclusively in the United States or in the other country.[41] But viewed from the Treasury's vantage, U.S. tax on U.S.-source taxable income has been reduced to $8.50, or 34 percent of $25, when in fact half of the parent's $100 in taxable income is fairly attributable to the United States. In essence the Treasury is giving the taxpayer an extra $25 deduction from U.S.-taxable income, even though that extra deduction is more properly attributable to income that is exempt from U.S. tax.

Now assume that the foreign affiliate characterizes $10 of its $75 payment to the parent as a royalty for current use of the proprietary knowledge produced by the $50 of domestic R&D. In tax treaty countries, foreign governments generally allow a deduction for royalty payments made to the U.S. parent that are directly related to local income; in this case, pursuant to such a treaty, the foreign country's definition of the affiliate's domestic-source income is reduced by $10, and foreign taxes are reduced by $3.40. The U.S. definition of foreign-source income is unchanged (since the royalty, like the dividend, is treated as foreign-source income of the parent), so

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[41] This statement assumes, of course, that the foreign taxing jurisdiction allows a deduction in full for R&D expenses as they are incurred.

the foreign tax credit limitation is unaffected. The tax paid to the United States is not increased by the decrease in foreign tax, because both (a) the credit limitation remains the same, and (b) excess credits can be employed.

The enterprise has reduced its total tax liability by $3.40, from $34 to $30.60, by characterizing $10 of the payment to the parent company as a royalty rather than a dividend. The reduction occurs because $10 of the R&D expense effectively has been deducted a second time. The first deduction was the $50 reduction of U.S.-source income corresponding to the R&D expense. The second deduction effectively occurs when foreign taxes are reduced as a result of the $10 royalty payment, while U.S. taxes remain the same. Because the royalty payment is treated as entirely foreign-source income of the parent and because the parent has excess credits, the company's total tax burden ($30.60 on $100 of worldwide income) is less than it would be if it operated exclusively in the United States or the other country, each of which imposes $34 of tax on $100 of worldwide income.

Table 4.—Example of U.S.-Allocated R&D Expense and Royalty Income

Item	U.S. source	Foreign source	Total
Income before R&D	$75.00	$75.00	$150.00
R&D deduction	50.00	0.00	50.00
Taxable income	25.00	75.00	100.00
Pre-credit U.S. tax	8.50	25.50	34.00
FTC limitation	0.00	25.50	25.50
FTC carryover available from prior year		3.40	3.40
(1) Net receipts of foreign affiliate repatriated as dividend			
Foreign tax on current income	0.00	25.50	25.50
Post-credit U.S. tax	8.50	0.00	8.50
Total tax	8.50	25.50	34.00
(2) $10 repatriated as royalty; balance repatriated as dividend			
Foreign tax on current income	0.00	22.10	22.10
Post-credit U.S. tax	8.50	0.00	8.50
Total tax paid currently	8.50	22.10	30.60

Critics of allocating U.S.-based R&D solely to U.S. income argue that for the foreign tax credit to operate properly, only the portion of expenses incurred for the production of U.S. income should reduce U.S.-source gross income. From this viewpoint, allocation of R&D solely to the United States is flawed since it permits all domestic R&D expenses to be deducted from U.S.-source income even where a portion of this expense is related to the production of foreign source income. Those in favor of 100 percent allocation to U.S.

income, however, argue that the R&D apportionment rules are arbitrary, complex, and counterproductive to the U.S. economy.

3. Export of Research and Development Activity

The principal reason for enacting and renewing the moratorium on apportionment of R&D expense under the 1977 Regulation was Congressional concern that the regulation encouraged multinational businesses to shift R&D activities abroad. However, according to the Treasury Department's June 1983 study, the impact of the R&D Regulation (at least under the old tax rates) was unclear. Based on National Science Foundation data, the Treasury study shows that, following the promulgation of Treasury Reg. sec. 1.861-8 in 1977, the foreign-performed share of R&D expenses by U.S. companies and their foreign affiliates dropped from 9.08 percent in 1978 to 8.20 percent in 1981.[42] Thus, the aggregate statistics did not show a shift of R&D offshore after the Regulation was adopted; however, the Treasury study notes that the foreign share of R&D does not depend solely on taxes.

The Treasury study also reviewed several economic analyses of the overseas R&D activity of multinational companies. This survey indicated that U.S. multinationals locate R&D offshore primarily to transfer developed technology or to adapt technology to indigenous factors of foreign markets, rather than to develop new technologies or new products for a worldwide market. The literature survey also indicated that there are important efficiency advantages of centralized R&D which make the establishment of offshore R&D units unattractive to multinational companies. The Treasury study concluded that, "Based on these considerations, it appears that foreign R&D is not highly substitutable for R&D performed in the United States." [43]

The primary importance of factors other than taxes in the R&D location decision was confirmed in a study by Arthur Andersen and Company. Based on a survey of 85 major multinational firms, the Arthur Andersen study found: "The results indicate that the most common incentive for determining timing, placement, and scope of R&D projects is the competency of the available workforce. The geographical location of necessary raw materials and research data was the second most frequent response." [44]

While the Arthur Andersen study found that taxes have some influence on the location of R&D investment, this factor was not of primary importance to the firms included in the survey.

Based on the Treasury study, and the other economic analyses cited therein, it would appear that there is little evidence that the 1977 Regulation resulted in a large shift of R&D offshore, at least under pre-tax reform rates, or that such a shift would have occurred had the Regulation's R&D rules been reimplemented prior to tax reform. Also, it should be noted that shifting R&D activity offshore is not the only tax planning strategy available for reduc-

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[42] Department of the Treasury, *The Impact of the Section 861-8 Regulation on U.S. Research and Development* (June 1983) p. 25.

[43] Treasury study, p. 28.

[44] Arthur Andersen and Co., *National Research and Development Study*, January 1983, p. V-3.

ing excess credits. An alternative option is to shift manufacturing activity to the United States or from a high tax foreign country to a low tax country. (Ireland is a popular low tax country for firms manufacturing for the European market). In addition, royalty or cost-sharing payments to the United States may in some cases be feasible means of reducing excess credits.

There may be situations where a U.S. company can most easily reduce excess credits by locating R&D offshore, and under these circumstances tax considerations may influence the location of R&D activities. However, even in those circumstances, the taxpayer would have to weigh the benefits to be gained through using extra foreign tax credits against the costs that may be incurred in foregoing the relatively-favorable provisions of the Code relating to R&D in general. (*See* Issue No. 5 below.)

Opponents of allocating all U.S. R&D expense to U.S.-source income argue that such a rule has some tendency to encourage firms to shift manufacturing operations and, hence, manufacturing jobs overseas. The reason is that the rule reduces the tax costs of operating in high tax foreign jurisdictions for some taxpayers, thereby increasing the relative attractiveness of operating abroad. Suspending the R&D Regulation (and, to a lesser extent, modifying the Regulation in the 1986 Act) reduced tax costs by increasing the amount of foreign taxes that can be credited to reduce U.S. tax. Proponents of 100-percent U.S. allocation argue that non-tax factors play at least as big a part in determining locations of plants (and manufacturing jobs) as they do in determining locations of laboratories (and R&D jobs). Opponents of 100-percent U.S. allocation, on the other hand, contend that individuals who can do manufacturing work are likely to be available throughout the world, while assembling a group of qualified researchers may only be possible at a much more limited number of locations.

4. The Moratorium as an Incentive for Domestic R&D

As indicated above, some argue that some firms may reduce research expenditures as a result of the Regulation's R&D rules. The suspensions of the R&D rules, it is asserted, were an R&D incentive.

The Treasury study examined this issue and found that as a result of suspending the Regulation's R&D rules, privately financed U.S. R&D was increased in 1982 between 0.27 and 0.65 percent or between $40 million and $260 million. The revenue cost of the moratorium in 1982 was estimated to be in the range of $100 million to $240 million. Thus, the increase in domestic R&D per dollar of revenue loss is estimated to range from $0.17 (40/240) to $2.60 (260/100).

Because the number of taxpayers with excess foreign tax credits will rise substantially under the new 34-percent corporate income tax rates, the effect of changes in the allocation and apportionment rules on R&D activity and Treasury tax receipts will probably be accentuated. Assuming that the Treasury's previously estimated range of elasticities of demand for domestic R&D remains valid under present law, the ratio of R&D increases to revenue lost will remain within the previously estimated range. However, it is ex-

pected that, at any given level of R&D activity, the revenue effect of any rule change will be greater than what it would have been under the old corporate rates.

The question arises whether modification of the R&D rules is an efficient method for stimulating R&D compared to other tax incentives, or to government sponsored R&D. When the Federal Government funds an R&D project, there is a one dollar increase in R&D for each dollar authorized. However, if all U.S.-based research is allocated to U.S. income, the tax revenues foregone could exceed the dollar value of increased private R&D. The Treasury study also pointed out that the tax benefits of dropping the R&D rules would, at that time, have been highly concentrated: 24 firms were estimated to obtain 85 percent of the benefit. In addition, the benefit would go only to firms with excess foreign tax credits and these may not be the same firms with the most promising research opportunities. The Treasury study concluded:

> All firms are not affected uniformly by the suspension of the regulation. It only reduces the tax liabilities of firms in an excess foreign tax credit position. These firms earn from 16 percent to 22 percent of the worldwide income of U.S. manufacturing corporations. Whether or not a firm is in an excess credit position does not seem to be closely related to the level of its R&D effort. The suspension of the regulation has its most significant impact on large, mature multinational firms, as opposed to small, emerging, high technology companies.

Thus, the Treasury study implied that there may be more effective, less haphazard methods to increase domestic R&D, at a lower revenue cost, than the repeal of the R&D rules of the Regulation. Under current law, the basic premise of this conclusion may be valid. For instance, the present credit for certain R&D expenses may encourage the pursuit of basic research by universities and other exempt organizations. Such research by exempt organizations does not benefit so clearly from an incentive relating to the allocation of R&D expenses. And even though corporate tax rates have been reduced by the Tax Reform Act of 1986, it generally remains true that many firms will not be in an excess credit position, and those that are may make R&D decisions based on non-tax, as well as tax, considerations.

On the other hand, the rate reduction potentially modifies the conclusions reached in the Treasury study. The percentage of worldwide income of U.S. corporations earned by firms in an excess foreign tax credit position is expected to rise as a by-product of the rate reduction, with the result that any change in the R&D allocation rules can now be expected to have a more uniform effect, from firm to firm, than was true in 1983. Consequently, the rate reduction tends to make any future revision of the R&D allocation rules a relatively more efficient mechanism for influencing taxpayers' R&D decisions. This is because the mechanism works only on taxpayers with excess credits, and it works better to the extent that it causes a greater proportion of taxpayers to face similar incentives for undertaking R&D in the United States.

5. Competitive Position of U.S. Firms in the World Marketplace

Opponents of the Regulation claim that U.S. firms are at a disadvantage relative to foreign firms since, according to the Arthur Andersen and Co. study, no country other than the United States specifically requires allocation of a portion of domestic R&D expense to foreign-source income. However, foreign countries may require allocations of domestic R&D expense to foreign-source income under their general tax principles. Moreover, in order to determine the relative tax advantage of international competitors in the conduct of R&D, it is necessary to examine all aspects of the tax system which influence the rate of return on R&D development projects. The U.S. tax system provides a number of incentives to R&D which may, on balance, offset the Regulation's R&D rules. First, most R&D expenses may be deducted in the year they are incurred even though the income resulting from the use of this knowledge may stretch out over many years (e.g., as long as 17 years in the case of a patent). Second, a 20 percent tax credit is now allowed on increases in U.S.-based R&D expenditures. Finally, as a result of the possessions tax credit (Code sec. 936), U.S. companies with possessions affiliates can effectively exempt from U.S. tax up to half of certain income attributable to R&D.

Thus, the international competitiveness of U.S. companies in high technology industries is influenced by a variety of provisions in the U.S. tax Code. While the R&D allocation rules may disadvantage U.S. companies relative to their foreign competitors, other provisions of the Code, such as the R&D credit, may offset this disadvantage.

6. Matching R&D Expenses with U.S. and Foreign Income

In general

U.S. income tax law generally attempts to match deductions for expenditures with the income that the expenditures help generate. This is done to measure income more accurately for purposes of imposing tax on the income from a particular source, a particular year, or a particular activity. To accurately measure income in a particular year, for example, capital expenses generally are not deductible in full in the year paid or incurred, but must be deducted ratably over the period of years during which they generate income. To accurately measure income from taxable activities such as investments, a deduction is generally denied for interest paid or incurred with respect to funds borrowed to invest in securities yielding tax-exempt income. And to accurately measure foreign-source income and U.S.-source income, the Code requires allocation and apportionment of deductions between foreign and domestic gross income. Without a proper computation of foreign-source income, the foreign tax credit could not properly function.

Determination of the source of income that R&D deductions should offset, however, raises difficult issues. Part of the difficulty arises because laboratories and other R&D facilities are cost centers, not profit centers. Much R&D never results in any income. The scientific method of trial and error sometimes produces no commercially valuable results. Expenses incurred for unsuccessful

research are generally tax-deductible, however. For the foreign tax credit system to function, those expenses for unsuccessful research must reduce foreign income or U.S. income (or some of each).

In general, expenses that do not yield current income are not currently deductible. Congress, however, has enacted a special rule (sec. 174) generally making R&D currently deductible even though it will not yield current income. Expenses that reduce taxable income must figure into the calculation of the foreign tax credit limitation. A foreign tax credit system that allocates current R&D expenses against current income may yield distorted results, because current income often arises more from past R&D than from current year R&D. This timing difference tends to distort any system that allocates current R&D expenses against current income. For instance, a taxpayer who has just begun foreign operations may have little current measurable foreign activity. If foreign operations expand in the future, however, current research may significantly benefit future foreign operations. If the taxpayer performs no R&D in those later years of profitable foreign operations, it is likely that any method (over the entire period) will overstate foreign income.

Moreover, it is especially difficult to allocate basic research expenses to foreign or U.S. income. And even focused research yields unanticipated results.

In summary, accurate tracing of R&D expenses to income presents severe practical problems. The R&D Regulation provides taxpayers with a limited opportunity to trace R&D expenses to income. Tracing is available only on the basis of "reasonable expectations" of "very limited or long-delayed application" of the R&D results outside the United States. The taxpayer must satisfy the Commissioner of the propriety of the tracing. The vagueness of this standard illustrates the difficulty of a tracing approach.

The Regulation's R&D rules embrace elements of each of three competing approaches to R&D deductions (in addition to their limited tracing approach). The Regulation's exclusive geographic apportionment rules are an application of the place-of-performance approach; the sales method is an application of the gross sales approach; and the optional gross income methods are an application of the gross income-to-gross income approach.

Place-of-performance rules

Advocates of a place-of-performance approach argue that there is no alternative to it that is not vague or arbitrary. In some cases, a straight place-of-performance rule may produce the theoretically proper measure of U.S. and foreign income. For example, a taxpayer conducts organic chemical research in the United States on methods of eliminating an agricultural pest found only in this country. The taxpayer earns all of its foreign income by manufacturing and selling inorganic chemical compounds in Europe. The taxpayer earns U.S. income by manufacturing and selling both organic and inorganic chemical compounds in the United States. The taxpayer's organic chemical research apparently bears little or no relation to its foreign income. For that reason, the expenses of that research should perhaps not reduce foreign income at all.

Opponents of a straight place-of-performance rule would not agree to its application in this case. There is some chance that the taxpayer's research will result in products that the taxpayer can manufacture abroad or processes that the taxpayer can use to earn foreign income.

Opponents of a place-of-performance rule argue that the R&D Regulation would reach the proper result by treating this case as one involving very limited foreign use of the R&D. Under the R&D Regulation's optional place-of-performance rule, presumably less than 100 percent of the taxpayer's R&D deduction would be apportioned to U.S. income.[45] Proponents of a straight place-of-performance rule reply that the optional place-of-performance rule yields complexity and confusion in this case.

Alternatives to the place-of-performance method

In some cases, the gross sales method (the rule of Reg. sec. 1.861-8(e)(3)(ii)(B)) or the gross income-to-gross income method (the rule of Reg. sec. 1.861-8(e)(3)(iii)) may produce the theoretically proper measure of U.S. and foreign income. Assume that a taxpayer owns U.S. and foreign patents for one drug. The taxpayer's only business is manufacturing that drug. The taxpayer manufactures in two factories, one in the United States and one in Germany (through a German branch). Profit margins and costs of production in these two factories are identical. The taxpayer conducts research in a U.S. laboratory. The focus of that research is improvement of the one drug patent that the taxpayer owns. Both gross foreign sales and income and gross U.S. sales and income appear to bear some relationship to the U.S. R&D. Comparison of gross sales is administratively feasible, and might be a proper way of allocating R&D expenses. Comparison of gross income is also administratively feasible, and would yield the same allocation of R&D expenses in this case.[46]

Proponents of a place-of-performance rule would argue that the U.S. R&D is more likely to produce U.S. income than foreign income, however. Any improvements that the R&D creates may be more likely to appear first in the U.S. market. There are several factors that could cause first U.S. appearance, including: proximity of the U.S. laboratory to the U.S. plant, familiarity of researchers with the U.S. market, greater political risk in the foreign country, familiarity of the company's marketers with the U.S. market, competition in the foreign market from unsafe drugs that cannot meet U.S. standards, and likelihood that foreign competitors will in-

[45] The R&D Regulation's optional place of performance rule has provoked debate. As discussed above, the R&D Regulation permits a taxpayer who qualifies for a 30-percent apportionment of his R&D deduction to income from one geographic source to apportion to that income a percentage of his R&D deduction "significantly greater" than 30 percent. He may do so if he establishes that the higher percentage is warranted because the R&D is reasonably expected to have a very limited or long-delayed application outside the geographic source. The R&D Regulation does not define the term "significantly greater." One example given in the Regulation (Example (10)) suggests that an apportionment to income from the geographic source that is 34 percent higher than the apportionment yielded by application of the base line percentage might, at least in some circumstances, be considered significantly greater; another example given in the Regulation (Example (9)) suggests that a 6-percent differential would not be. Taxpayers have argued that the Regulation should give taxpayers more specific guidance on this point.

[46] For simplicity, the example equates profit margins and costs of production in the two factories owned by a single corporation, so that the two methods yield the same allocation. A comparison of two methods when they do not yield the same allocation appears below.

fringe on the improvement. Moreover, although the R&D is focused on an existing product, it might well result in a new product or process that produces only or primarily U.S. income.

Comparison of gross sales and gross income methods

Both the gross sales rule and the gross income rule involve difficulties. A sales method involves practical difficulties. For example, assume that a U.S. taxpayer who manufactures and sells an automobile windshield defrosting device in the United States and licenses the device for manufacture and sale abroad by foreign automobile makers. The taxpayer's gross U.S. sales are its sales of the windshield defrosting device in the United States. Determination of gross foreign sales is more difficult. One application of the sales method and look-through rules would compare these sales with those of the foreign licensee, which are sales of automobiles. The automobile sales reflect many cost components of the automobiles other than the windshield defrosting device, so this comparison seems inappropriate.

To deal with the difficulty of estimating third-party licencees' (and purchasers') sales, the R&D Regulation adopts a deemed sales price for certain licensed (and purchased) intangibles of ten times the amount received for the intangibles. Critics note the arbitrariness of this deemed sales figure.

Advocates of the sales method point out that arbitrariness can be avoided sometimes because taxpayers exercise a degree of control over whether the look-through rules of the sales method are applied and, thus, over whether sales of certain foreign entities will be treated as the taxpayer's own for purposes of apportioning R&D expense. For example, the R&D Regulation provides that if a U.S. taxpayer and its controlled corporation enter into a bona fide cost-sharing arrangement for purposes of developing intangible property, then the controlled corporation's sales relating to the intangible property will not be treated as the taxpayer's for purposes of apportioning the taxpayer's R&D expense.

Critics of the sales method argue that the gross income-to-gross income method avoids the comparison of sales (or deemed sales) in all cases and, in addition is easier to use than the sales method, has been approved by U.S. courts, and had been used widely by U.S. taxpayers for many years.

Critics of the sales method also point out that the method seems to produce arbitrary results in some circumstances. For example, suppose that the sales method is used by a U.S. licensor who negotiates a large up-front license fee from a foreign company with the proviso that the fee will reduce future royalties. If the licensee makes few sales in the year in which the up-front fee is paid, most of the foreign-source income from the license will not cause R&D expense to be apportioned to foreign-source income.

On the other hand, the gross income-to-gross income method may encourage U.S. taxpayers to license technology to foreign manufacturers instead of utilizing the technology themselves to manufacture products for sale abroad. Assume that the before-tax return would be the same from these two alternatives. If the sales method were mandated, foreign sales would be taken into account in apportioning the R&D expense to foreign-source income in either case. If,

however, the gross income-to-gross income method were used, foreign sales would be taken fully into account only if the taxpayer chose to manufacture and sell directly.[47] If the taxpayer chose to license the relevant technology to others instead, foreign license fees only, likely equaling a small percentage of the licensee's foreign sales, would be taken into account in apportioning R&D expense to foreign income.

Use of the gross income-to-gross income method also may, in contrast with the sales method, result in a smaller apportionment of R&D expense to foreign-source income when foreign operations are conducted through a subsidiary as compared to a branch. The reason is that gross income attributable to a foreign subsidiary generally includes only profits distributed to the U.S. parent and not retained for foreign investment. A U.S. parent generally can control the timing of these dividends and thus can potentially reduce gross income from foreign sources to zero in a given year and thereby avoid any allocation of R&D expense to foreign-source income. Moreover, the dividends represent the foreign subsidiary's receipts net of depreciation, interest, and other indirect expenses. To the extent of its own operations, on the other hand, the gross income of a U.S. parent generally includes receipts whether reinvested or not and whether offset by expenses or not. If the U.S. corporation has a foreign branch, the gross income of the latter is a component of the U.S. corporation's gross income. Whether operations are conducted through a foreign subsidiary or a foreign branch bears no relation to the connection between particular R&D activities and types of income. The gross income-to-gross income method's distinction between branch and subsidiary operations, therefore, seems unwarranted.

At least in part for this reason, the unmodified R&D Regulation limits the application of the gross income-to-gross income method to cases when its results do not diverge too greatly from those of the gross sales method. However, under the 1986 Act, this restraint on the potential distortions of the gross income method, as applied to subsidiary operations, is temporarily lifted. Under the modified regulation, U.S. enterprises operating abroad through subsidiaries are allowed an exclusive 50-percent allocation of R&D deductions to the place of performance, followed by apportionment of the rest on a basis that could lead to disproportionate results: comparison of U.S. *gross* income of the parent with distributed *net* income of the subsidiary.

In addition, the gross income-to-gross income method may give U.S. taxpayers a limited incentive to underprice technology transfers to related parties abroad when the technology is developed through substantial research expenditures. Code section 482 allows the IRS to correct any improper transfer prices, but it has proved difficult to administer in practice. In any case, section 482 would not necessarily give the IRS authority to readjust transfer prices based on R&D performed in the same year as the transfer, absent

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[47] In the case of the direct manufacturing and sales alternative, the gross income method would account for sales through foreign branches directly; the gross income method would generally account for sales of foreign subsidiaries indirectly, only upon payment of subsidiary dividends, and then only to the extent of the subsidiary's net (rather than gross) income.

an unusually short lead time between research and product improvement.

Breadth of product categories

Critics of the Regulation's R&D rules argue that the prescribed product categories are too broad. They point out that research which relates solely to a product sold in the United States may nonetheless be apportioned to foreign-source income when a second product, falling in the same product category as the first, happens to be sold abroad. For example, an apportionment to foreign-source income of R&D expense relating to bulldozers manufactured and sold solely in the United States may be required when the taxpayer manufactures and sells small gasoline engines for lawnmowers abroad because the bulldozers and lawnmower engines fall in the same product category.[48]

As another example, a taxpayer performs basic pharmaceutical research in the United States in an effort to create new antibiotics. The taxpayer's U.S. plants produce a variety of antibiotics for the U.S. market, while the taxpayer's foreign plants produce only aspirin for foreign markets. Nonetheless, under the R&D Regulation, antibiotics and aspirin are in the same product category, and the general rules of the Regulation would allocate some of the R&D expense to foreign-source income unless the taxpayer met the burden of showing very limited or long-delayed application of the R&D abroad. Proponents of the R&D Regulation argue that this result may in fact be the correct one. For example, although the taxpayer does not use the basic research in producing aspirin, the taxpayer might not use it immediately in producing antibiotics, either.[49] Also, the taxpayer might begin making substantial foreign sales of any new drug its R&D creates.

Critics of the R&D rules argue that the use of narrower product categories (for example, three-digit instead of two-digit SIC categories) should be permitted. Alternatively, they argue that allocation should be permitted on a project-by-project basis and product categories should be eliminated.

Narrower product categories might, however, eliminate the R&D rules' capacity to take into account for apportionment purposes that R&D sometimes contributes unexpected benefits. For instance, in the bulldozer/lawnmower example above, it is assumed that the R&D relating to the bulldozers yields no results applicable to the lawnmower engines. But in some circumstances, a taxpayer's bulldozer-related R&D might unexpectedly benefit its lawnmower engine line.

Also, the structure of the product categories Wholesale trade and Retail trade sometimes allows a taxpayer to apportion all of its R&D expense relating to a product that sells both in the United States and abroad to U.S.-source income. This may be viewed as a mitigating factor in connection with the breadth of the product categories.

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[48] *See* paragraph (g) of Regulation, Example (4).

[49] If the expenditures in this case were for testing existing products rather than for developing new products, they are related to income from those products. Such expenses are not subject to the allocation rules of the R&D Regulation. *See* Treas. Reg. sec. 1.174-2(a)(1). Therefore, such expenses would typically be deductible from U.S.-source income.

For example, suppose a U.S. corporation manufactures and sells forklift trucks in the United States and distributes them abroad through a wholesaling subsidiary. The U.S. corporation performs R&D relating to the forklift trucks but none relating to wholesale trade. The manufacture and sale of forklift trucks in the United States belongs to the product category Transportation equipment, but the wholesaling of the trucks abroad will generally belong to the product category, Wholesale trade. None of the U.S. corporation's R&D expense attributable to the forklift trucks is allocable to the wholesaling subsidiary's sales abroad because those sales are in a different product category (Wholesale trade) from the product category to which the sale and manufacture of forklift trucks belong and to which the R&D relates (Transportation equipment).[50]

Treatment of basic research

The treatment of basic research expense under the R&D rules has also been questioned. The Regulation states that R&D that cannot be clearly identified with one or more product categories is to be divided among all product categories. One of the examples given in the Regulation (Example (15), at paragraph (g) of Regulation) indicates that the Internal Revenue Service might regard some basic research as not clearly identifiable with any product categories and, thus, properly attributable to all product categories. In the example, basic research expense incurred by a U.S. manufacturer of heating equipment is considered related to all the manufacturer's product categories and, as a result, is allocated in part to income from the manufacturer's foreign hotel subsidiary.

Critics of the Regulation's R&D rules argue that this allocation is unfair. In their view, basic research expense generally should not be divided among all product categories. They argue that while basic research, by its nature, is less narrowly focused than applied or developmental research, basic research is frequently undertaken specifically in relation to one product or a group of products to the exclusion of others. Therefore, basic research expense should generally be attributable to one or a few of a taxpayer's product categories rather than all the taxpayer's product categories.

Advocates of the R&D Regulation respond that it may be possible to allocate basic research expense in this manner under the Regulation as presently drafted. To do so, a taxpayer must show that his basic research *is* clearly identified with certain product categories. The fact that the basic research may relate to several of the taxpayer's product categories should not normally prevent the taxpayer from attributing the expense to fewer than all of his product categories since the R&D Regulation permits the aggregation of product categories for allocation purposes.

Complexity

Critics of the Regulation argue that the R&D Regulation is overly complex and lengthy. They state that assembling the data necessary to perform the allocation calculations is very time con-

[50] *See* paragraph (g) of the Regulation, Example (6).

suming and difficult. They question whether the additional revenue that might be collected under the Regulation is worth the expenditure of taxpayers' and the Federal Government's time and money in attempting to comply with and administer the Regulation. On the other hand, the R&D Regulation applies to few taxpayers. In 1976, for example, only 6,513 U.S. corporations claimed foreign tax credits. Moreover, much of the R&D Regulation's complexity arises from various options (such as the optional increase in exclusive place-of-performance allocation) that benefit the taxpayers that choose them.

7. Sourcing of Royalty and License Payments

It has been proposed that U.S.-performed R&D expenses be deducted exclusively from U.S.-source income. On the other hand, royalty income from foreign affiliates attributable to this R&D is allocated exclusively to foreign sources. This mismatch in sourcing rules can lead to a double deduction for R&D expense as described above. If the proposal is adopted, this double deduction problem can be cured by treating all or part of royalty payments from foreign affiliates as U.S.-source income in situations where the parent deducts R&D exclusively from U.S.-source income. Such an approach could more accurately match income with the respective economic activities that give rise to that income. Of course, this approach would decrease the benefit to taxpayers of the proposed 100-percent allocation of U.S.-based R&D to U.S. income.

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